

SUPPLIER				SUPPLIER No. :			
				P.O. No. :			
COMPUTER REF 65701							
GPA GENERATOR AND POWER TRANSMISSION PROTECTION SYSTEM							
CHAPTER II : SYSTEM FUNCTION							
AS BUILT AT TAKE-OVER							
REV.	DATE	By	CH. by	APPR. by	MODIFICATIONS	STATUS	
3	85-01-15	BER	GLB	GLB	SENT TO ESCOM	C.A.E	
2	07-04-82	PER	MCR	GLB	SENT TO ESCOM.	B.P.E	
B	18-03-82	PER	FOA	GLB	BROUGHT UP TO DATE (Letter EJ 6811)		
1	16-04-81	GLB	PER	MOL	SENT TO ESCOM	B.P.E	
A	28.5.79	RLD	FOA	MOL	ORIGINAL ISSUE		
KOEBSERG NUCLEAR POWER STATION							
 ESCOM ELECTRICITY SUPPLY COMMISSION				FRAMATOME — ALSTHOM ATLANTIQUE SPIE BATIGNOLLES — FRAMATEG CONTRACT N. OPN 11229			
CONTRACTOR MEMBER		ALSTHOM ATLANTIQUE CGEE ALSTHOM		CONTRACTOR MEMBER DOC. No.		P4108A41492	
DOCUMENT NUMBER		KEA1217GPA002		AA--LTP		15	
REV.		123					
THIS DOCUMENT IS CONTRACTOR'S PROPERTY AND CANNOT BE USED, REPRODUCED, TRANSMITTED AND/OR DISCLOSED WITHOUT PRIOR WRITTEN PERMISSION							

2.1 - FUNCTION

The purpose of the GPA elementary system is :

- to detect
 - . internal electrical faults of internal origin, affecting the generator, the 24 kV connection, the generator and unit transformers, the connections to 6,6 kV non safeguards busbars,
 - . certain external faults, affecting the 400 kV network
- to coordinate the actions necessary for fault clearing within a period of time compatible with the withstand capabilities of the equipment and with a view to ensuring the units availability,
- to process data and annunciate alarms subsequent to fault appearance for control staff and processing equipment.

2.2 - SAFETY FUNCTION

This system has no nuclear safety classification level but is considered as having an interaction with reactor protection.

				CONTRACTOR MEMBER	ALSTHOM ATLANTIQUE												
				CONTRACTOR MEMBER	CGEE ALSTHOM												
REV	DR. by	DATE	MODIFICATIONS	DWG N°	P	4	1	0	8	A	4	1	4	9	2		
B	PERHIN	18.03.82	BROUGHT UP TO DATE														
DWG N°					K	E	A	1	2	1	7	G	P	A	0	0	2
					A	A	-	-	L	T	P	2	5				

G P A

1 - CLASSIFICATION

1.1 - Safety class

NC

1.2 - Seismic category

-

1.3 - Quality assurance program (system)
(components)

C2

C3

2 - RULES AND STANDARDS

2.1 - Safety

2.1.1 - Reference power station

TRICASTIN

2.1.2 - French rules and standards

none

2.1.3 - US rules and standards
(IEEE, RG, ANSI ...)

none

2.2 - Manufacture rules

References of fabrication rules and standards used.

KBA 12 15 AO4 001 (Protection
CUBICLES 003 AND 004 AR)
KBA 12 15 FO2 001 (CT AND VT
SPECIFICATION)

3 - GEOGRAPHICAL LOCATION - TRAINS USED

3.1 - Geographical location of the system
(buildings, floor ...).

Electrical building
level 15,50-m
L605

3.2 - Train used for power, control,
compressed air.

TRAIN A
For 48 V DC control and 220 V AC

				CONTRACTOR MEMBER		ALSTHOM ATLANTIQUE										
				CONTRACTOR MEMBER		CGEE ALSTHOM										
B	PERMIN	18-03-92	BROUGHT UP TO DATE			P	4	1	08	A	4	14	92			
REV	DR. by	DATE	MODIFICATIONS													
DWG N°		KBA		12	17	G	PA	002	AA		-	-	L	T	P	3/5

R

A4

NORME AFNOR 22

4 - EMERGENCY ELECTRICAL SUPPLY (by diesel generators)

no

5 - REDUNDANCY

5.1 - Existence of a redundant counterpart

no

5.2 - Redundancy of the main components

no

5.3 - Capacity - redundancy

no

6 - PHYSICAL SEPARATION from redundant systems

N/A

7 - OPERATION CRITERIA

7.1 - Inspection during operation

yes

7.2 - Systematic periodical tests

yes

7.3 - Accessibility

yes

8 - ENVIRONMENT CRITERIA

8.1 - Qualification to design basis events

8.1.1 - Natural phenomena

- earthquake (SSE)

no

- rain, ice, snow

yes

- flood

yes

- lightning

yes

- low humidity

N/A

8.1.2 - Postulated phenomena

- fire

yes

- turbine missile (direct throw)

partly

- other missiles

no

- explosion

no

- lashing of pipes

yes

- liquids from broken pipes

yes

- noxious vapours and gases

no

- ionising radiations

N/A

8.1.3 - Protection against sabotage

yes

				CONTRACTOR MEMBER	ALSTHOM ATLANTIQUE																	
					CGEE ALSTHOM																	
B	PERNIN	19-03-82	BROUGHT UP TO DATE	CONTRACTOR MEMBER	P	4	1	0	8	A	4	1	4	9	2							
REV	DR. by	DATE	MODIFICATIONS	DWG N.																		
DWG No.				KBA	1	2	1	7	G	P	A	0	0	2	A	A	-	-	L	T	P	4/5

8.2 - Influences on other systems

- fire
- missiles
- explosions
- lashing of pipes
- liquids
- noxious vapours or gases
- ionising radiations

yes
no
N/A
N/A
N/A
N/A
N/A

				CONTRACTOR MEMBER		ALSTHOM ATLANTIQUE									
						CGEE ALSTHOM									
				CONTRACTOR MEMBER											
				DWG N.		P 4 1 0 8 A 4 1 4 9 2									
REV	DR. by	DATE	MODIFICATIONS												
DWG N.			KBA 1 2 1 7 G PA 0 0 2 AA - - L T P 5/5												