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EMPRESARIOS AGRUPADOS

PROJECT

FLEMALLE CCGT PROJECT

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PROJECT DOCUMENT NUMBER **EBL-20-YI_-IR_-EAI-00200**	DOCUMENT NAME **Plant Control System Database Structure**	
INTERNAL DOCUMENT NUMBER **222-20-R-I-00200**	DOCUMENT OWNER: **EMPRESARIOS AGRUPADOS INTERNACIONAL, S.A.**	REVISION **01**

CLASSIFICATION

Contains information for the design of structures, systems or components: Yes ☐ No ☒

Design verification : Not applicable ☒ Head of OU/Supervisor ☐ Verifier Level 1 ☐ Level 2 ☐

CONTROL OF MODIFICATIONS

Issue	Modifications
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PRELIMINARY OR PENDING INFORMATION

Issue	Paragraphs	Subject	Status
1	--	--	--

DISTRIBUTION

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1. PURPOSE AND SCOPE

The purpose of this document is to establish the fields of the database that will be used to record the input and output signals hardwired to the Distributed Control System (DCS) of FLEMALLE CCGT Project. This structure may undergo slight modification and/or be subject to additions once the DCS Supplier of the plant is selected and the structure has been submitted for acceptance.

This structure shall be used by all participants in project engineering who prepare DCS I/O lists to ensure that the information contained in this database is uniform and consistent. Every participant shall provide the DCS I/O list in its native format (Microsoft Excel format).

2. DATA BASE FIELDS DESCRIPTION

The following table defines for every record associated to a hardware I/O to the DCS the meaning of its fields, assigning a field name, field data type, field size and a field description of each defined parameter. The proposed database structure covers digital and analog signals.

Signals lists must be performed using the Microsoft Excel format:

Index	Column Name	Data Type	Field Size	Description	Responsibility (Note 1)
1	OWNER	Text	10	Responsible party for IO point. Examples are: EA, SIEMENS, JC, etc.	PE
2	POINTNAME	Text	17	Signal ID (Key field)	PE
3	FLD_DEV	Text	12	Device tag name (1st and 2nd KKS level identification)	PE
4	3_KKS	Text	5	3rd KKS level	PE
5	DESC (Note 2)	Text	60	Device description, first language (English)	PE
6	DESC 2ND (Note 2)	Text	60	Device description, second language (French)	PE
7	ACTIVE (Note 2)	Text	10	For booleans, logic “1” description (English)	PE
8	ACTIVE 2ND (Note 2)	Text	10	For booleans, logic “1” description (French)	PE
9	INACTIVE (Note 2)	Text	10	For booleans, logic “0” description (English)	PE
10	INACTIVE 2ND (Note 2)	Text	10	For booleans, logic “0” description (French)	PE
11	EST	Text	1	For booleans, enter "1" for give an alarm in the DCS for the ACTIVE status or "0" for the INACTIVE status. If left blank no alarm is required in the DCS	PE
12	PRI	Text	1	Priority level alarm in DCS	PE
13	SIG_TYPE	Text	2	Select from the following types: DI: Digital input DO: Digital output AI: Analog input AO: Analog output	PE
14	SIG_LEVEL	Text	10	Input voltage level for SIG_TYPE: 4-20 mA, 24 VDC, NAMUR, TCE (Thermocouple type E), TCK (Thermocouple type K), RTD, etc.	PE
15	PWR_SRC	Text	1	Signal power source: F: for field wetted signals S: (system) for DCS powered signals	PE
16	LINE MONITORING	Yes/No	-	If empty no line monitoring required	PE
17	LOCATION	Text	25	Physical location where the DCS Cabinet and associated termination board is located. A location may have multiple cabinets from different controllers	PE
18	IO_GROUP	Text	15	Group of signals identification which are connected to the DCS trough the same cable, therefore they must be assigned to the same I/O card. It is formed with the system KKS + actuator code + numeric character, i.e., 10LA_MOV_01	PE
19	DEV_PARTITION	Text	1	This field is used to determine which termination boards to assign an I/O point during terminal boards layout. For example, if	PE

Index	Column Name	Data Type	Field Size	Description	Responsibility (Note 1)
				3 analog inputs have an A, B and C partition, three separate I/O cards will be assigned during engineering to these points, one for each inputs. This column also applies to redundant pumps, valves, etc.	
20	DEVICE_LO	Number	-	For analog, 0% of the device calibration range (4 mA)	PE
21	DEVICE_HI	Number	-	For analog, 100% of the device calibration range (20 mA)	PE
22	DEVICE_UNITS	Text	8	For analog, engineering units of the device calibration range	PE
23	DISPLAY_LO	Number	-	For analog, 0% of display value	PE
24	DISPLAY_HI	Number	-	For analog, 100% of display value	PE
25	DISPLAY_UNITS	Text	8	For analog, engineering units of display value	PE
26	PRECISION	Number	-	Analog scaling precision - defines the number of decimal places. If blank will be calculated based on display low and high values.	PE
27	SOE	Yes/No	-	Use checkbox, if point is used for sequence of events.	PE
28	HIST	Yes/No	-	Use checkbox, if point signal is to be stored in the Historian.	PE
29	PID	Text	30	P&ID KKS where device/equipment is depicted	PE
30	LOGIC	Text	30	Control logic diagram KKS where device is depicted	PE
31	HMI_SCREEN	Text	30	HMI Screen ID where the device is depicted	PE
32	SCHEM	Text	30	Wiring diagram KKS where device is depicted	PE/DCS
33	CONTROLLER	Text	8	DCS controller ID where signal will be processed	DCS
34	CARD_CABINET_ID	Text	20	DCS cabinet ID where the card associated to the signals is located	DCS
35	CARD_ID	Text	16	DCS card ID within the cabinet	DCS
36	CARD_TYPE	Text	15	Card model	DCS
37	CARD_POINT_Nº	Number	-	I/O card point where signal will be assigned	DCS
38	TA_MODEL	Text	16	Terminal Assembly Model	DCS
39	TA_TAG_ID	Text	16	Terminal Assembly tag identification	DCS
40	MC_ID	Text	16	Marshalling cabinet ID where the signal from field is hardwired	DCS
41	MC_TERM_STRIP_ID	Text	16	Marshalling terminal strip ID where the signal from field is hardwired	DCS
42	TB_1	Text	10	Marshalling terminal block 1st (+)	DCS
43	TB_2	Text	10	Marshalling terminal block 2nd (-)	DCS
44	TB_3	Text	10	Marshalling terminal block 3rd	DCS
45	TB_4	Text	10	Marshalling terminal block 4th	DCS
46	MOD	Text	1	Modification code indicating a change occurred: A: Added M: Modified D: Deleted	PE

Index	Column Name	Data Type	Field Size	Description	Responsibility (Note 1)
47	REV	Text	2	Revision - indicates the revision for the change. If the modification code has been changed this field should be also updated	PE
48	REV_COMMENT	Text	255	Revision comment. Explains the changes in the signal	PE
49	REV_DATE	Date/Time	-	Date when signal was entered or revised	PE
50	REMARKS	Text	255	Field for general remarks	PE

Note 1: DCS (DCS Supplier), PE (Process Engineer).

Note 2: For Booleans the description of the signal is obtained by concatenating the fields “DESC/DESC 2ND” and “ACTIVE/ACTIVE 2ND”. For analog signals, the signal description will be the field "DESC/DESC 2ND”.