N° PLANO: AGM-02-0204-PLA-P-0052 / 0

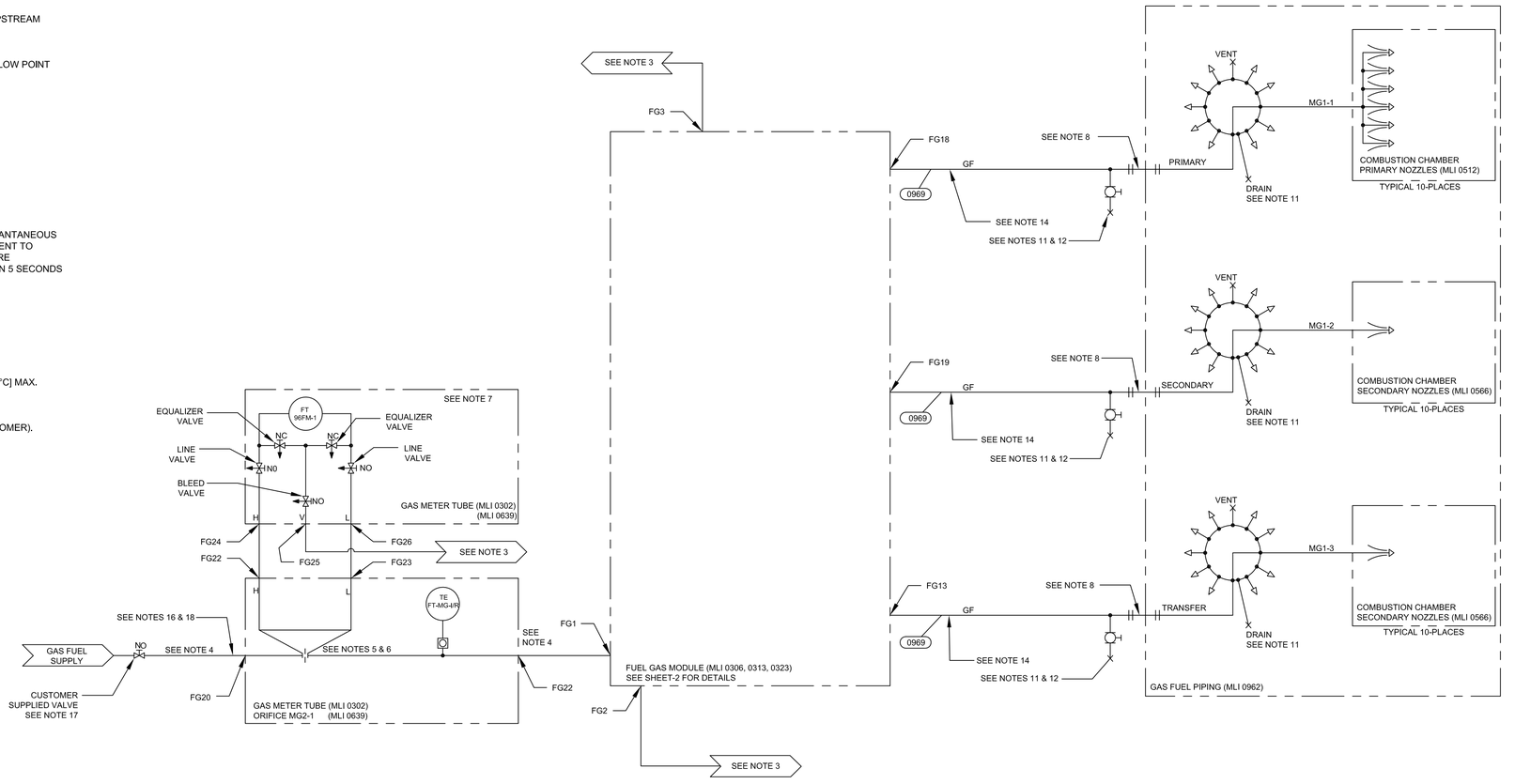
NOTES:

1. SEE 354A3215 FOR P&ID SYMBOL DEFINITION.
2. SEE DEVICE SUMMARY (MLI 0414) FOR DEVICE SETTINGS, RATINGS AND RANGES.
3. INTERFACE POINT IS A POTENTIAL CLASS-1, DIV-1 SOURCE OF NATURAL GAS. THE INSTALLER MUST ROUTE FG3 SEPERATE FROM ALL OTHER VENTS TO AN AREA FREE FROM IGNITION SOURCES.
4. FOLLOW API 14.3/AGA REPORT-3 FOR INSTALLATION AND REQUIREMENTS FOR PIPE LENGTH PRECEDINIG AND FOLLOWING METER TUBE, MG2-1.
5. METER TUBE MG2-1 ORIFICE DIAMETER TO BE DETERMINED BY SUPPIER USING GE ORDERING SHEET DATA. PRESSURE DROP FROM FG20 TO FG21 SHALL BE 5 PSID [34 KPAD].
6. GE SUPPLIED EQUIPMENT UPSTREAM OF FG1, SHALL BE INSTALLED TO MEET EXPLOSION PROOFING REQUIRMENTS OF CLASS-1, GROUP-D, DIVISION-2..
7. BLEED VALVE TO BE OPEN AND EQUALIZER VALVES TO BE CLOSED DURING TURBINE OPERATION TO ENSURE ACCURATE GAS FLOW MEASUREMENTS.
8. A CONCIAL STRAINER IS TO BE FIELD INSTALLED BETWEEN THE GAS VALVE AND THE FUEL GAS MAINFOLD AT A FLANGED LOCATION (AS CLOSE AS POSSIBLE TO THE MANIFOLD). THE STRAINER IS ORIENTED PER MANUFACTURER'S INSTRUCTIONS. REFER TO OPERATING INSTRUCTIONS (MLI A179) FOR ADMINISTRATIVE GUIDELINES ON REMOVAL OF THE STRAINER TO VERIFY SYSTEM CLEANLINESS. A NEW GASKET MUST BE INSTALED FOLLOWING THE REMOVAL OF THE STRAINER.
9. CONSULT THE SERVICE MANUAL FOR WHEN TO CHANGE THE STRAINER BASKET (S).
10. THIS NOTE APPLIES TO SYSTEMS WITH THE FUEL GAS STRAINER LOCATED INSIDE OR OUTSIDE OF THE MODULE.

    THE FOLLOWING GENERAL GUIDELINES SHOULD BE USED FOR PIPING DESIGN:
    -LOCATE THE STRAINER IN A STRAIGHT, HORIZONTAL RUN OF PIPE. PROVIDE A MINIMUM OF 10 PIPE DIAMETERS UPSTREAM OF THE STRAINER INLET WITHOUT BENDS OR REDUCERS.
    -AVOID ARRANGEMENTS WHICH PRODUCE A NOZZLE EFFECT AT THE INLET OF THE STRAINER.
    -IF THE STRAINIER IS LOCATED WITH-IN THE MODULE CONSIDER FG1 TO BE THE STRAINER INLET FOR UPSTREAM PIPING DESIGN CONDITIONS.
    -ALLOW 10 INCHES [254mm] OF HEADROOM ABOVE DUPLEX STRAINER FOR BASKET REMOVAL.
11. PRESSURE DIFFERENTIAL INDICATOR IS CONNECTED BETWEEN GAS SUPPLY PIPING AND GAS MANIFOLD LOW POINT DRAINS WHILE TEMPORARY CONICAL STRAINER IS IN USE (REFER TO MLI A179).
12. LOW POINT DRAIN THREADED BALL VALVE CONNECTION.
13. SEE MLI 0302 FOR PURCHASER'S CONNECTION AND INSTALLATION DETAILS OF METERING TUBE.
14. FLUID VELOCITY SHALL BE LIMITED TO 200 FEET/SEC (61M/SEC) IN INTERCONNECT PIPING.
15. NATURAL GAS LHV 1017.25 BTU/SCF 20917 BTU/LB.
16. GAS TEMPERATURES
    MAX: 80° F (26.67° C)
    MIN: 66°F (18.89° C)

    MAXIMUM SUPPLY PRESSURE EXCURSIONS ARE LIMITED TO EITHER 1% PER SECOND RAMP OR 5% INSTANTANEOUS STEP. THE 1% PER SECOND RAMP IS APPLICABLE OVER THE RANGE OF MINIMUM PRESSURE REQUIREMENT TO MAXIMUM OPERATING PRESSURE. THE 5% STEP IS APPLICABLE OVER THE RANGE OF MINIMUM PRESSURE REQUIREMENT TO 95% OF MAXIMUM OPERATING PRESSURE AND WITH MAXIMUM OF 5% STEP CHANGE IN 5 SECONDS

    THE MAXIMUM RATE OF GAS TEMPERATURE CHANGE IS 2°F [17°C]/SEC.
17. PROVIDE CLASS-VI SHUT OFF.
18. PROVIDE 500 PSIG [3447.38 kPa] OVER-PRESSURE PROTECTION UPSTREAM OF METER TUBE.
19. GAS FUEL MUST MEET GE141040.
20. POTENTIAL SOURCE OF NATURAL GAS AT TEMPERATURE SHOWN IN NOTE16 OR PURGE AIR AT 710°F [377°C] MAX.
21. GAS FUEL MODULE VENT FANS WILL BE SHIPPED WITH MLI 0991.
22. SYSTEM PARAMETERS AND SPECIFICATIONS ARE BASED ON GE DRAWING 123E2488 (PROVIDED BY CUSTOMER). INCLUDING REQUIREMENTS FOR DUAL FUEL SYSTEMS PER CUSTOMER SCOPE OF WORK.



0	14/07/11	ISSUED FOR CONSTRUCTION; SEE NOTE 22	SAB	CB	TK
REV.	FECHA	REVISIONES O MODIFICACIONES	DIBUJO	REVISO	APROBO

REF. FABRICANTE		
REF. FABRICANTE	FABRICANTE	O/C:

AGM-02-0204-PLA-M-0073	MECHANICAL OUTLINE-GTG	(MLI 0306)	
AGM-02-0204-PLA-P-0054	FUEL PURGE P&ID	(MLI 0477)	
AGM-02-0204-PLA-P-0050	TRIP OIL P&ID	(MLI 0418)	
AGM-02-0204-PLA-I-0046	DEVICE SUMMARY	(MLI 0414)	
AGM-02-0204-PLA-M-0013	DUAL FUEL NOZZLE ASSEMBLY-SECONDARY	(MLI 0566)	
AGM-02-0204-PLA-M-0009	DUAL FUEL NOZZLE ASSEMBLY-PRIMARY	(MLI 0512)	
AGM-02-0204-PLA-M-0003	OUTLINE-GT PACKAGE CONNECTION-PIPING	(MLI 0313)	
N° DE DOCUMENTO	DESCRIPCIÓN	REV.	FECHA
DOCUMENTOS DE REFERENCIA			

IMPORTANTE

ESTE PLANO FUE ELABORADO EN AUTOCAD V.2008
CUALQUIER MODIFICACION REALIZADA EN CAMPO DEBERA SER NOTIFICADO A LA UNIDAD RESPONSABLE.
QUEDA PROHIBIDO CORREGIR ESTE PLANO SIN AUTORIZACION DE ESTA UNIDAD.

ALL DIMENSIONS IN BRACKETS [ ] ARE MILLIMETER; EXPRESSED DIMENSIONS ARE INCHES

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AMPLIACIÓN DE LA CAPACIDAD DE GENERACIÓN Y TRANSPORTE DE ELECTRICIDAD EN LA ISLA DE MARGARITA

PLANO N°: | REV:

PROYECTO N°: 409-2956-1

FUEL GAS P&ID
DUAL FUEL MOD. UNITS 298034 & 298035
(MLI 0422)

CALCULO:	PROYECTO:	ESCALA: NONE	PLANO No: AGM-02-0204-PLA-P-0052
REVISADO: C. Brown	CALCULO:	FECHA: 14/07/11	
DIBUJO: S. Boerckel	REVISADO: J. Castillo	DISK. N°	
APROBADO: T. Koontz	DIBUJO:	ESC./PLOTEO:	
ARCHIVO:	APROBADO: M. Monticelli	ARCHIVO:	PAGINA: 1 DE: 4 REV. 0

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N° PLANO: AGM-02-0204-PLA-P-0052 0

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AL-87
AL-88
DL-51
ASW-43
ASW-44
23VS-1
26VS-1

VTA FG14
VTA FG14
SEE NOTE 21
88VL-1
23VL-1
PS 63VL-4
88VL-2
23VL-2
PS 63VL-5
PS 63VL-3
FG3
PDI FG-3
NC
NO
NO
PI FG-1
NO
PT 96FG-1
PT 96FG-2A
PT 96FG-2B
PT 96FG-2C
PI FG-2
NO
PVL
FROM PURGE SEE (MLI 0477)
FG1
FG2
NC
NC
OH-2
OLT-2
OD-3
H
GPL-1
FC
VSR-1 (MLI 0507) SEE SHEET 3
TE FT-GC-1
TE FT-GC-2
TE FT-GC-3
20VG-1
OD-3
OLT-2
OH-2
OH-2
OLT-2
OD-3
H
GPL-2
FC
VGC-1 (MLI 0509) SEE SHEET 3
PT 96FG-4
PI FG-3P
NO
FG18
PRIMARY
GF
TO SHEET 1
FROM PURGE SEE (MLI 0477)
PA4
PT 96FG-5
PI FG-3S
NO
FG19
SECONDARY
GF
TO SHEET 1
OD-3
OH-2
OLT-2
OD-3
GPL-3
H
FC
VGC-2 (MLI 0509) SEE SHEET 3
FROM TRIP OIL SEE (MLI 0418)
TO/FROM TRIP OIL SEE (MLI 0418)
TO TRIP OIL SEE (MLI 0418)
OH-2
OLT-2
OD-3
PT 96FG-6
PI FG-3T
NO
FG13
TRANSFER
GF
TO SHEET 1
OH-2
OLT-2
OD-3
GPL-4
H
FC
VGC-3 (MLI 0509) SEE SHEET 3
FROM PURGE SEE (MLI 0477)
PA5
GAS FUEL MODULE (MLI 0991)

N° DE DOCUMENTO	DESCRIPCIÓN		REV.	FECHA
	DOCUMENTOS DE REFERENCIA			
AGM-02-0204-PLA-M-0073	MECHANICAL OUTLINE-GTG	(MLI 0306)		
AGM-02-0204-PLA-P-0054	FUEL PURGE P&ID	(MLI 0477)		
AGM-02-0204-PLA-P-0050	TRIP OIL P&ID	(MLI 0418)		
AGM-02-0204-PLA-I-0046	DEVICE SUMMARY	(MLI 0414)		
AGM-02-0204-PLA-M-0013	DUAL FUEL NOZZLE ASSEMBLY-SECONDARY	(MLI 0566)		
AGM-02-0204-PLA-M-0009	DUAL FUEL NOZZLE ASSEMBLY-PRIMARY	(MLI 0512)		
AGM-02-0204-PLA-M-0003	OUTLINE-GT PACKAGE CONNECTION-PIPING	(MLI 0313)		

REV.	FECHA	REVISIONES O MODIFICACIONES	DIBUJO	REVISO	APROBO
0	14/07/11	ISSUED FOR CONSTRUCTION; SEE NOTE 22 SHEET-1	SAB	CB	TK

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REF. FABRICANTE		

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AMPLIACIÓN DE LA CAPACIDAD DE GENERACIÓN Y TRANSPORTE DE ELECTRICIDAD EN LA ISLA DE MARGARITA

FUEL GAS P&ID
DUAL FUEL MOD. UNITS 298034 & 298035
(MLI 0422)

PLANO N°:	REV:		
PROYECTO N°: 409-2956-1			
CALCULO:	PROYECTO:	ESCALA: NONE	PLANO No: AGM-02-0204-PLA-P-0052
REVISADO: C. Brown	CALCULO:	FECHA: 14/07/11	
DIBUJO: S. Boerckel	REVISADO: J. Castillo	DISK. N°	
APROBADO: T. Koontz	DIBUJO:	ESC./PLOTEO:	
ARCHIVO:	APROBADO: M. Monticelli	ARCHIVO:	PAGINA: 2 DE: 4 REV. 0

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IMPORTANTE

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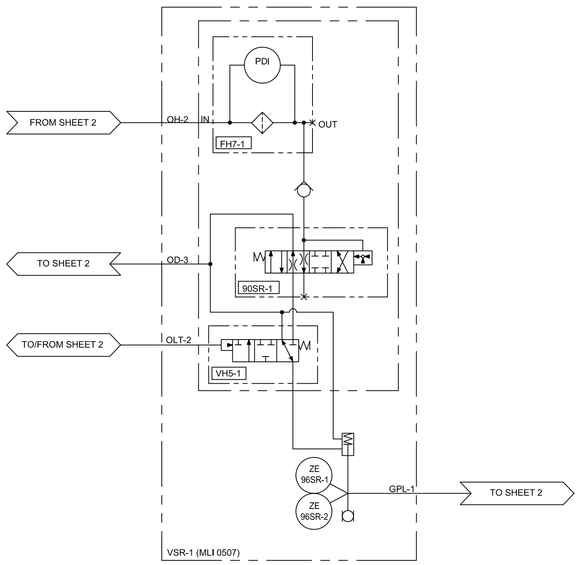

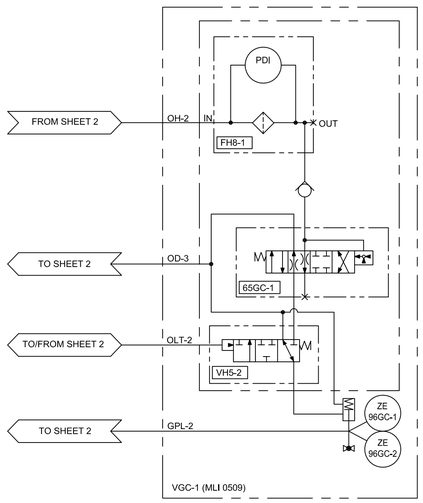

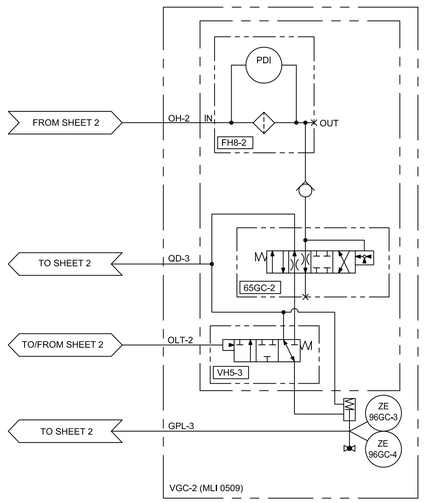

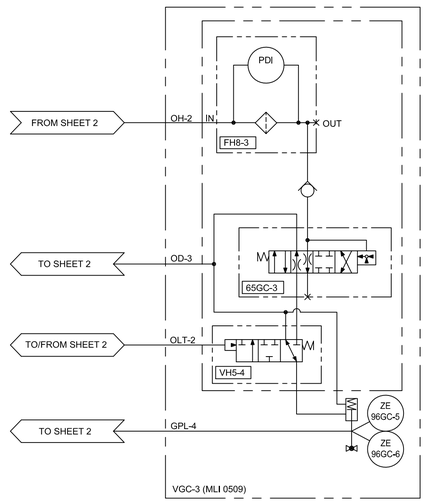

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FUEL GAS P&ID
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PLANO N°:	REV:		
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ARCHIVO:	APROBADO: M. Monticelli	ARCHIVO:	PAGINA: 3 DE: 4 — REV. 0

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INTERFACE POINT NAME	SHEET No. DWG ZONE	FLUID TYPE	MIN PRESSURE PSIG [KG/CM²] (UNLESS OTHERWISE NOTED)	MIN TEMPERATURE °F [°C]	MIN FLOW #/SEC [KG/SEC]	MAXIMUM PRESSURE PSIG [KG/CM²] (UNLESS OTHERWISE NOTED)	MAXIMUM TEMPERATURE °F [°C]	MAXIMUM FLOW #/SEC [KG/SEC]	CONNECTION DESCRIPTION	INTERFACE TYPE
FG1	SH-1	GAS (SEE NOTE 15)	315 [22.15]	SEE NOTE 16	0.4 [0.18]	375 [26.36]	SEE NOTE 16	14.86 [6.74]	FUEL GAS INLET	GEPGE - OTHERS
FG2	SH-1	GAS	0	AMBIENT	0	375 [26.36]	SEE NOTE 16	1.0 [0.45]	FUEL GAS STRAINER BLOWDOWN	GEPGE - OTHERS
FG3	SH-1	GAS/AIR	0	AMBIENT	0	150 [10.55]	SEE NOTE 20	1.0 [0.45]	GAS COMPARTMENT VALVE VENT	GEPGE - OTHERS
FG13	SH-1	GAS	0	AMBIENT	-	350 [24.61]	120 [48]	8.12 [3.68]	FUEL GAS TRANSFER DISCHARGE	GEPGE - GEPGE
FG14	SH-2	GAS/AIR	0	AMBIENT	-	6in H2O	150 [65]	950 SCFM	GAS COMPARTMENT VENT DISCHARGE	GEPGE - OTHERS
FG18	SH-1	GAS	0	AMBIENT	-	350 [24.61]	120 [48]	12.63 [5.34]	FUEL GAS PRIMARY DISCHARGE	GEPGE - GEPGE
FG19	SH-1	GAS	0	AMBIENT	-	350 [24.61]	120 [48]	5.94 [2.69]	FUEL GAS SECONDARY DISCHARGE	GEPGE - GEPGE
FG20	SH-1	GAS	315 [22.15]	AMBIENT	-	375 [26.36]	120 [48]	14.86 [6.74]	FUEL GAS #1 METER TUBEINLET	GEPGE - OTHERS
FG21	SH-1	GAS	315 [22.15]	AMBIENT	-	375 [26.36]	120 [48]	14.86 [6.74]	FUEL GAS #1 METER TUBE OUTLET	GEPGE - OTHERS
FG22	SH-1	GAS	315 [22.15]	AMBIENT	-	375 [26.36]	120 [48]	0	FUEL GAS #1 METER TUBE SENSING LINE - UPSTREAM	GEPGE - OTHERS
FG23	SH-1	GAS	315 [22.15]	AMBIENT	-	375 [26.36]	120 [48]	0	FUEL GAS #1 METER TUBE SENSING LINE - DOWNSTREAM	GEPGE - OTHERS
FG24	SH-1	GAS	315 [22.15]	AMBIENT	-	375 [26.36]	120 [48]	0	FUEL GAS #1 5 VALVE MANIFOLD - HI PRESSURE INLET	GEPGE - OTHERS
FG25	SH-1	GAS	315 [22.15]	AMBIENT	-	375 [26.36]	120 [48]	0	FUEL GAS #1 5 VALVE MANIFOLD - EQUALIZER VENT	GEPGE - OTHERS
FG26	SH-1	GAS	315 [22.15]	AMBIENT	-	375 [26.36]	120 [48]	0	FUEL GAS #1 5 VALVE MANIFOLD - LO PRESSURE INLET	GEPGE - OTHERS

REV.	FECHA	REVISIONES O MODIFICACIONES	DIBUJO	REVISO	APROBO
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REF. FABRICANTE	FABRICANTE	O/C:
REF. FABRICANTE		

DOCUMENTOS DE REFERENCIA			
N° DE DOCUMENTO	DESCRIPCIÓN	REV.	FECHA
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