

	PROGETTISTA	COMMESSA	UNITA' -
	LOCALITA' REGIONE LIGURIA		
	PROGETTO / IMPIANTO FSRU Alto Tirreno e Collegamento alla Rete Nazionale Gasdotti		Rev. 0

Rif. TRR: 72438

**EMERGENZA GAS
INCREMENTO DI CAPACITÀ DI RIGASSIFICAZIONE (DL 17.05.2022, n. 50)**

FSRU Alto Tirreno e Collegamento alla Rete Nazionale Gasdotti

**Rapporto Preliminare di Sicurezza
per la fase di Nulla Osta di Fattibilità (NOF)
ai sensi del D.Lgs. 105/15**

**Allegato C.7.10
Matrice Causa-Effetti E Dettagli Sistema Di Controllo terminale**

0	Emissione per Enti			G. Lanza	Marzo 2024
Rev.	Descrizione	Elaborato	Verificato	Approvato	Data

Illustration 4.14.1b Control Flow for ESD and Tank Protection System (FSRU Mode)

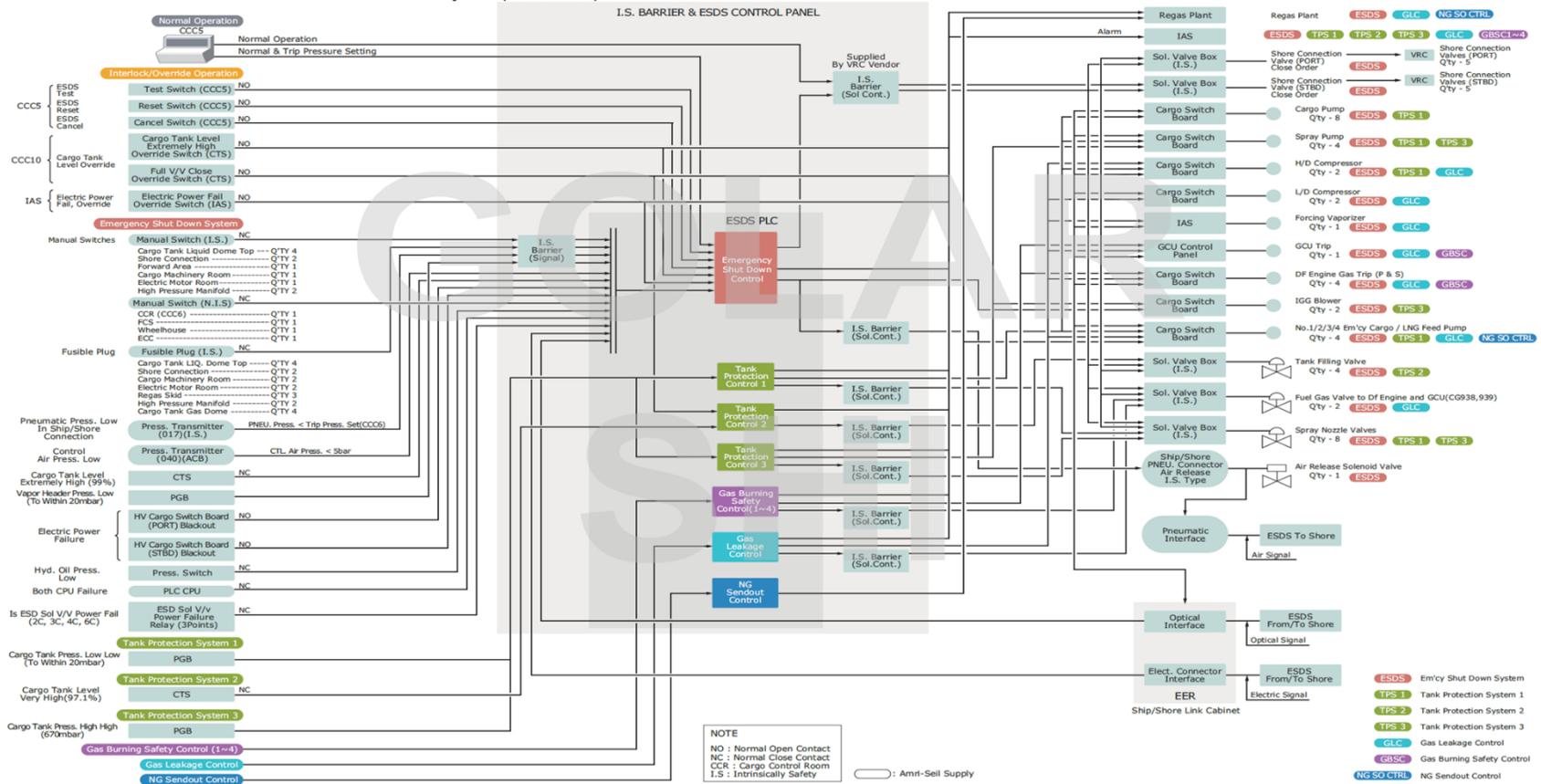


Illustration 4.14.1c ESDS Screen Shot

EMERGENCY SHUTDOWN SYSTEM

ESDS FSRU MODE

Home Page

Cause Of ESD Trip

- ESD Total Alarm
- Hydr Oil Press Low
- 1 Cargo Tank level Extreme High
- 2 Cargo Tank level Extreme High
- 3 Cargo Tank level Extreme High
- 4 Cargo Tank level Extreme High
- Vapor HDR Press LL
- CTL Air Pressure Low < 5bar
- IS ESD Sol VV Power Fail (3C)
- IS ESD Sol VV Power Fail (4C)
- IS ESD Sol VV Power Fail (8C)
- ELECTRIC POWER FAIL (CSBD 1/2)

Manual Push Button Station(No Delay)

- ESD Manual Activated

Shore Activated ESD

- SHORE TO SHIP LNG ESD
- SHORE TO SHIP CNG ESD
- ESD Pneumatic Press Low Alarm

CTL Air Pressure(PT040) 0.00

ELECTRIC POWER FAIL OVERRIDE

Override

DFDE P&S Gas Trip Reset

Reset

Tank Protection TPS1

- 1 Cargo Tank Press LowLow(TPS1)
- 2 Cargo Tank Press LowLow(TPS1)
- 3 Cargo Tank Press LowLow(TPS1)
- 4 Cargo Tank Press LowLow(TPS1)

Tank Protection TPS2

- 1 Cargo Tank Level Very High(TPS2)
- 2 Cargo Tank Level Very High(TPS2)
- 3 Cargo Tank Level Very High(TPS2)
- 4 Cargo Tank Level Very High(TPS2)

Tank Protection TPS3

- 1 Cargo Tank Press High High(TPS3)
- 2 Cargo Tank Press High High(TPS3)
- 3 Cargo Tank Press High High(TPS3)
- 4 Cargo Tank Press High High(TPS3)

Important Alarms (Not ESD)

- BC CPU Fail Alarm (Both CPU Fail>ESD)
- 3C Sol VV Box Hyd Press
- 4C Sol VV Box Hyd Press
- 8C Sol VV Box Hyd Press
- 8C Sol VV Box Hyd Press

ESD Override

- ESD Total Alarm Override
- Electrical Power Fail ESD Override
- Shore To SHIP ESD Override
- Pneumatic Press Low ESD Override
- 1C TK Level EH ESD Override
- 2C TK Level EH ESD Override
- 3C TK Level EH ESD Override
- 4C TK Level EH ESD Override
- 1C TK level VH(FILL VV Close) Override
- 2C TK level VH(FILL VV Close) Override
- 3C TK level VH(FILL VV Close) Override
- 4C TK level VH(FILL VV Close) Override

Gas Burning Safety Control

- Gas Burning Safety Controller 1 Activated P DFDE
- Gas Burning Safety Controller 2 Activated S DFDE
- Gas Burning Safety Controller 3 Activated P&S DFDE
- Gas Burning Safety Controller 4 Activated GCU

Gas Leakage Control

- Gas Leakage Controller Activated IN EMR Or CMR
- Port DFDE RM Or GVU RM Gas Leakage
- Stbd DFDE RM Or GVU RM GAS Leakage
- GCU AREA GAS Leakage

Misc Alarms

- Master Gas VV(CG938(DFDE))
- Master Gas VV (CG639(GCU))
- Port DFDE Fuel Gas Valve (CG946) Trip
- Stbd DFDE Fuel Gas Valve (CG947) Trip
- LNG / Forcing Vaporizer Stop
- NO 2 & NO 3 EIR Supply Fans Stop(P&S)
- Port GVU RM Or NO 3 EIR Fans Stop
- Stbd GVU RM Or NO 2 EIR Fans Stop
- GCU GVU RM EXT Fans Stop
- BOG Temp HH/LL For CG938(GCU)
- BOG Temp HH/LL For CG938(DFDE)
- LD Comp. Stop & Master Gas VV Close(WH)
- LD Comp. Stop & Master Gas VV Close(CCC)
- LD Comp. Stop & Master Gas VV Close(ECC)
- LD Comp. Stop & Master Gas VV Close(FCS)
- Normal Source Power Fail
- UPS Source Power Fail
- UPS abnormal alarm

SHIP SHORE LINK SYSTEM

- Ship Shore Link System Abnormal
- Ship Shore Link System Inhibit In

REGAS SYSTEM

- Fusible Plug Activated For Regas Plant
- Regas Plant EMCY Stop
- NG Sendout ESD VV Closed
- NG Sendout ESD VV Sol De-Energized

Thermo Fusible Plugs

- ESD Fusible Plug Activated

Illustration 4.14.3a Ship-Shore Link

