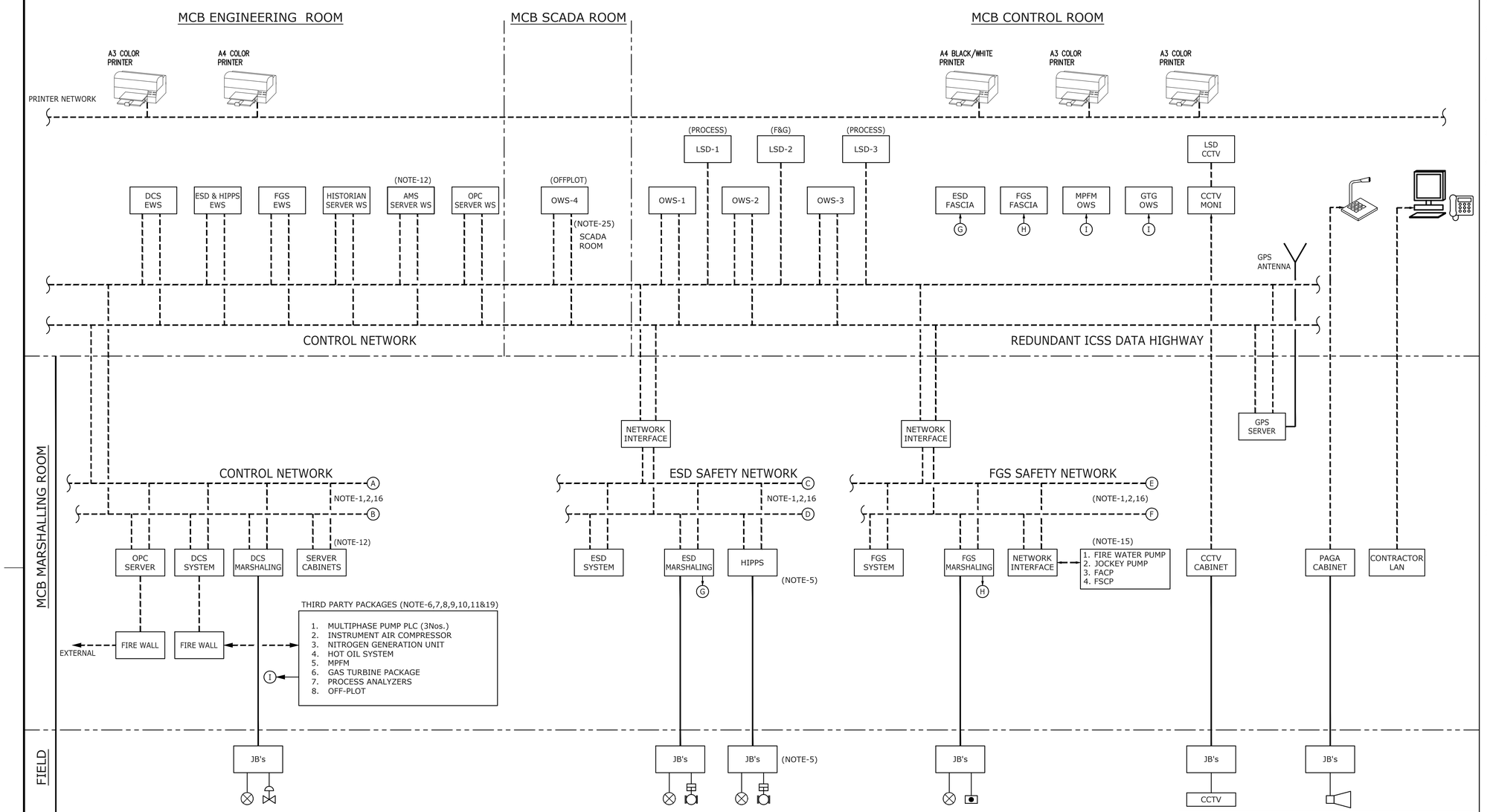
ICSS SYSTEM ARCHITECTURE MRBF



NOTES:

1. ICSS NETWORK FIBER OPTIC CABLES BETWEEN SUB-STATIONS & CONTROL ROOM SHALL BE REDUNDANT AND FOLLOW DIFFERENT CABLE LAYING ROUTES.
2. FUNCTIONALLY & PHYSICALLY DEDICATED FOPP'S SHALL BE USED FOR DCS, FGS & ESD SYSTEM OF THE ICSS IN THE NETWORK CABINETS BOTH AT INSTRUMENTATION ROOMS OF SUB-STATIONS AND CONTROL ROOM ENDS.
3. SYSTEM CABLES BETWEEN ICSS CABINETS AND NETWORK CABINET SHALL BE ROUTED IN CABLE TRAYS ON THE FALSE FLOOR OF INSTRUMENTATION ROOM OF SUB-STATIONS.
4. FUNCTIONALLY & PHYSICALLY DEDICATED IRP'S SHALL BE PROVIDED FOR ESD & DCS SYSTEMS.
5. FIELD JUNCTION BOXES AND CABLES SHALL BE SEGREGATED AS PER KOC-I-002 SECTION 10.
6. THIRD PARTY PACKAGES SHALL BE INTERFACED WITH DCS THROUGH REDUNDANT LINKS USING MODBUS TCP/IP.
7. THIRD PARTY PACKAGE SYSTEMS SHALL ALSO BE TIME SYNCHRONIZED WITH DCS.
8. THIRD PARTY PACKAGES INSTRUMENTS SHALL ALSO BE AVAILABLE ON AMS. REQUIRED HARDWARE LIKE HART MULTIPLEXERS SHALL BE SUPPLIED FOR THE INTERFACE.
9. NUMBER OF THIRD PARTY PACKAGES SHALL BE CONFIRMED DURING DETAIL ENGINEERING WHEN ALL THE PACKAGES ARE FINALIZED.
10. THIRD PARTY PACKAGE SYSTEMS SHALL BE LOCATED IN THE NEAREST INSTRUMENTATION ROOM OF THE PROCESS UNITS.
11. ALL THIRD PARTY SYSTEMS SHALL BE PROVIDED WITH ENGINEERING WORKSTATION FOR UPLOADING/DOWNLOADING OF PROGRAMS. ENGINEERING WORKSTATION SHALL BE LOADED WITH LICENSED SOFTWARE'S.
12. ALL THE SERVERS, WORKSTATIONS & KVM SWITCHES SHALL BE RACK MOUNTED IN THE SERVER CABINETS. CONSOLES SHALL ONLY BE USED FOR INSTALLING MONITORS AND PRINTERS.
13. DUAL MONITORS FOR THE OPERATOR WORKSTATIONS SHALL BE MOUNTED HORIZONTALLY IN SIDE-SIDE CONFIGURATION.
14. REDUNDANT OPC, AMS, SOE, HISTORIAN,GPS SERVERS TO BE PROVIDED.
15. BUILDING FACP'S SHALL BE LOOPED THROUGH REDUNDANT LINKS AND CONNECTED TO THE FACILITY F&G SYSTEM THROUGH REDUNDANT INTERFACE.
16. ALL THE INTRA FACILITY FO CABLES BETWEEN THE BUILDINGS SHALL BE SINGLE MODE FO. ICSS INTERNAL COMMUNICATIONS FO CABLES CAN BE AS PER ICSS VENDOR STANDARD.
17. FAULT ALARMS OF ALL THE ICSS CABINETS, THIRD PARTY SYSTEMS CABINETS AND OTHER SYSTEM PANELS OF THE FACILITY LIKE PAGA, CCTV, AND UPS ETC. SHALL BE HARDWIRED TO DCS.
18. PROVISION TO CONNECT PORTABLE ENGINEERING STATION LIKE LAPTOP SHALL BE PROVIDED IN THE INSTRUMENTATION ROOM TO BE USED DURING COMMISSIONING AND TROUBLESHOOTING.
19. DEDICATED NETWORK CABINETS SHALL BE CONSIDERED FOR THIRD PARTY INTERFACES CONSIDERING LARGE NUMBER OF THIRD PARTY SYSTEMS.
20. ICSS SYSTEM ARCHITECTURE SHOWS MINIMUM ICSS REQUIREMENTS, WHICH SHALL BE READ IN CONJUNCTION WITH PROJECT TECHNICAL SPECIFICATIONS AND RELEVANT KOC STANDARDS.
21. WHEREVER PRACTICAL CONTROL, MONITORING AND SHUTDOWN OF THE PACKAGED UNITS SHALL BE IMPLEMENTED IN THE FACILITY ICSS UNLESS ANY GUARANTEE/WARRANTEE & OPERATIONAL REQUIREMENTS DEMANDS DEDICATED SYSTEMS.
22. FACILITY TO MONITOR CCTV. PAGA TO BE PROVIDED AT MCB AND SECURITY BUILDING.
23. REQUIREMENT OF SPARE SPACE & POWER SUPPLY SHALL BE PROVIDED DURING THE DETAIL ENGINEERING, PRIOR TO FINALIZING POWER SUPPLY SYSTEM & SPARE.
24. THIRD PARTY NETWORK SHALL BE PROVIDED WITH SPARE PORTS TO INTEGRATE OFF-PLOT SIGNALS.
25. DEDICATED WORKSTATION TO BE PROVIDED FOR MONITORING THE OFFPLOT SIGNALS.

ABBREVIATIONS

AMS	–	ASSET MANAGEMENT SYSTEM
DCS	–	DISTRIBUTED CONTROL SYSTEM
ESD	–	EMERGENCY SHUTDOWN
EWS	–	ENGINEERING WORKSTATION
FACP	–	FIRE ALARM CONTROL PANEL
FGS	–	FIRE & GAS SYSTEM
FO	–	FIBER OPTIC CABLE
FOPP	–	FIBER OPTIC PATCH PANEL
FSCP	–	FIRE SUPPRESSION CONTROL PANEL
F&G	–	FIRE & GAS DEVICES
GTG	–	GAS TURBINE GENERATOR
GPS	–	GLOBAL POSITIONING SYSTEM
HIPPS	–	HIGH–INTEGRITY PRESSURE PROTECTION SYSTEM
ICSS	–	INTEGRATED CONTROL & SAFETY SYSTEM
IRP	–	INTERPOSING RELAY CABINET
KVM	–	KEY BOARD, VIDEO, MOUSE
LSD	–	LARGE SCREEN DISPLAY
MCB	–	MAIN CONTROL BUILDING
MPFM	–	MULTIPHASE FLOW METER
OPC	–	OLE FOR PROCESS CONTROL
OWS	–	OPERATOR WORKSTATION
PLC	–	PROGRAMMABLE LOGIC CONTROLLER
SCADA	–	SUPERVISORY CONTROL & DATA ACQUISITION SYSTEM
SOE	–	SEQUENCE OF EVENTS
VRU	–	VAPOR RECOVERY UNIT

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MUTRIBA REMOTE BOOSTING FACILITY (MRBF)

ICSS SYSTEM ARCHITECTURE

LEGENDS:

ETHERNET CABLE

HARDWIRED CABLE

REF. DWGS. NO.	REFERENCE DRAWINGS TITLE

REV	AMENDMENTS	DRAWN	APPR'D	DATE
0	ISSUED FOR TENDER	DAVID	MANI	6-8-24

ENGINEERING DESIGN			
CHECKED	PROJ.ENG.	MANI	
APPR'D	SNR.ENG.	MOHAMAD	
APPR'D	T.L.G.P–II	FAISAL AL-KANDARI	
PROJECT REFERENCE		MRBF	

DRAUGHTING DESIGN			
DRAWN	D.D/MAN	DAVID	12-06-24
CHECKED	S.D.D/MAN		
CHECKED	L.D.D/MAN		
SCALE:		NTS	

APPROVALS			
DESIGNATION TEAM/GROUP	NAME	SIGNATURE	DATE

KOC DRAWING NO. MRBF-IN-1101 | SHEET | REV. 0

DO NOT SCALE IF IN DOUBT ASK

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