



**ESEC**<sup>®</sup>  
EAST SEA ENERGY ENVIRONMENT



**Project: ETAP POWER ENGINEERING SERVICE**

**Customer: CARGILL VIETNAM**

**TURN IT BALANCE**

# Customer Profile



Cargill provides food, agriculture, financial and industrial products and services to the world.

Established in October 1995, Cargill Vietnam is one of the largest animal feed distributors in Vietnam. Cargill currently has 11 feed processing factories and a leading staff of over 2000 employees in Vietnam.

# PROBLEM

1

Power System Data have NOT overall evaluation yet

2

Relay Setting Values are NOT selective co-ordination, between upstream-downstream, bus levels.



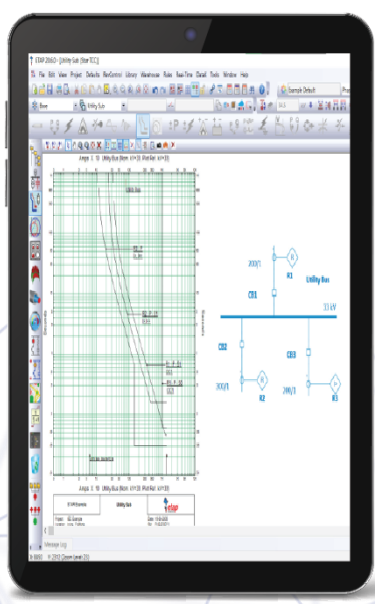
3

Arc Flash category of electrical panels is NOT Calculated

4

To load calculation for the future expansion

# The Solution



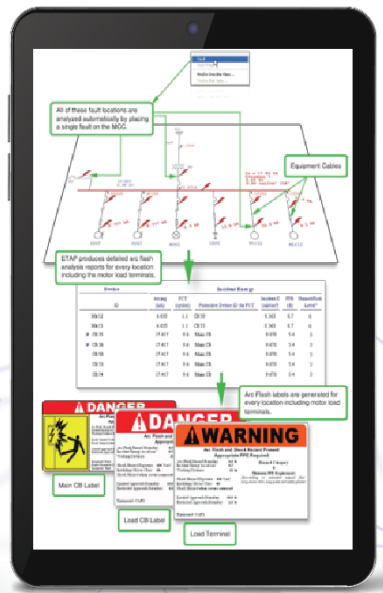
Load Flow Analysis - Output Report: LF Report

Configuration: LF Report Date: 11/05/2015

DeviceID	Type	Condition	Rating/Load	Over	Region %
Cable20	Cable	Overload	76.4 Amp		1

DeviceID	Type	Condition	Rating/Load	Operating	% Operating	Phase 1
SuK20	Bus	Over Voltage	13.9 kV	13.929	101	3 Ph
SuK22	Bus	Under Voltage	3.45 kV	2.324	66.4	3 Ph
U704	Bus	Under Voltage	0.48 kV	0.466	97.1	3 Ph
U705	Bus	Under Voltage	1.00 kV	91.194	91.2	
Bus1	Bus	Under Voltage	4.18 kV	4.043	97.2	
Bus2	Bus	Under Voltage	0.48 kV	0.466	97.1	
			1 kV	0.46	95.8	



## ETAP Power Engineering Service Perform Power Engineering Service using ETAP software to perform works with report and recommendation

- Data collection & verification.
- System modelling.
- Load Flow analysis.
- Short Circuit calculation.
- Protective Relay co-ordination.
- Arc Flash analysis with NFPA 70E, IEEE 1584 standard indicates the required PPE category

# Customer benefits

Whole electrical system has evaluated, overall re-calculated and analyzed for power system comprehensively. In addition, the future expansion also take into account.

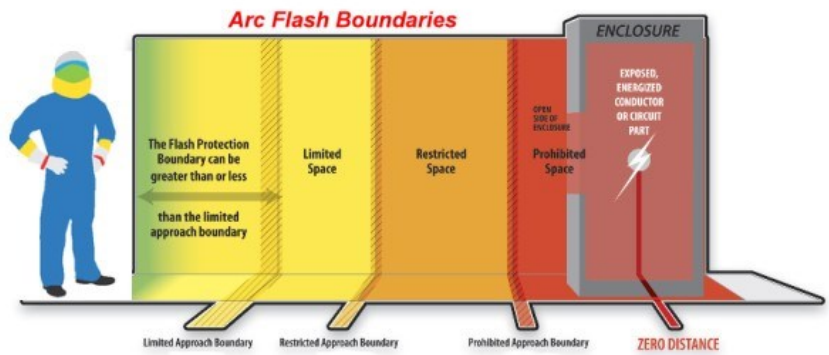
Incident energy and arc flash level are evaluated correctly, reduced risk

Arc Flash values can help to select PPE and optimize the safety system

Equipment duty, operating parameters were well checked, verified and adjusted

All switchboards from MV to LV are labelled and configured arc flash boundary

Protection relay devices were selective co-ordination, and to make sure the operating system correctly



 <b>WARNING</b>	
Arc Flash & Shock Hazard Appropriate PPE Required	
ARC FLASH PROTECTION	SHOCK PROTECTION
Arc Flash Hazard Category	Voltage Shock Hazard
Incident Energy (cm/in <sup>2</sup> )	Limited Approach Boundary
@ Working Distance	Restricted Approach Boundary
Arc Flash Boundary	Prohibited Approach Boundary
	Glove Class