



ESEC[®]
EAST SEA ENERGY ENVIRONMENT



Project: ETAP POWER ENGINEERING SERVICE

Customer: FIRST SOLAR

TURN IT BALANCE

Customer Profile



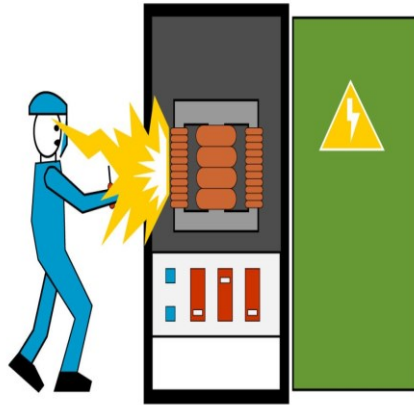
First Solar is a leading global provider of comprehensive photovoltaic (PV) solar systems which use its advanced thin-film modules. The company's integrated power plant solutions deliver an economically attractive alternative to fossil-fuel electricity generation today.

First Solar's workforce in Vietnam has grown to more than 1,200 associates who are leading the way in the development of solar module design and production.

PROBLEM

1

Power System Data have NOT overall evaluation yet



3

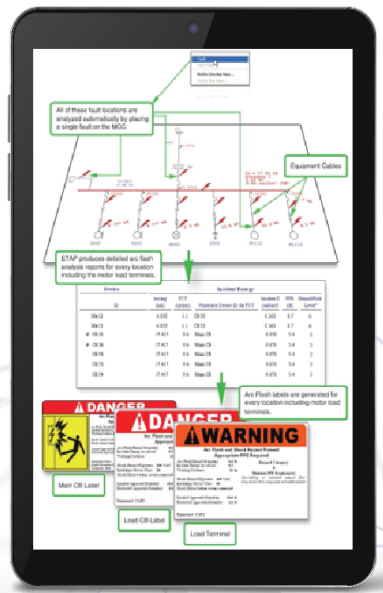
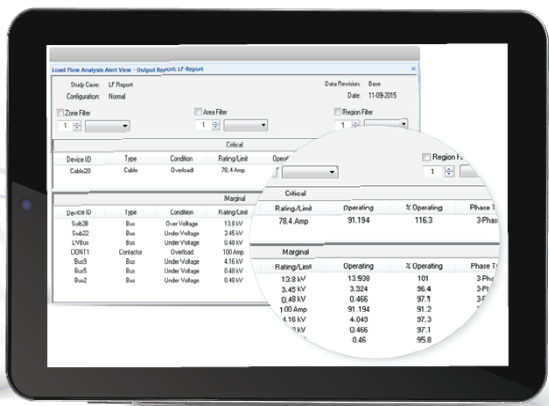
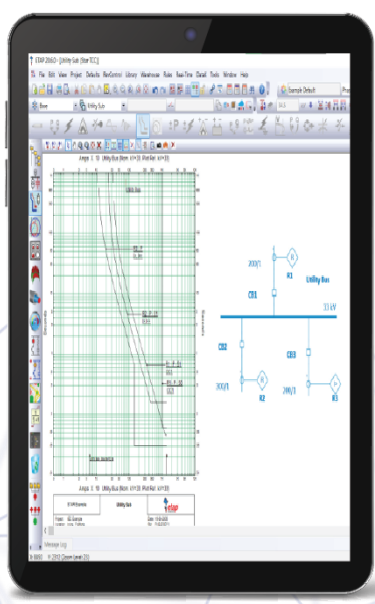
Arc Flash category of electrical panels is NOT Calculated

2

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



The Solution



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.

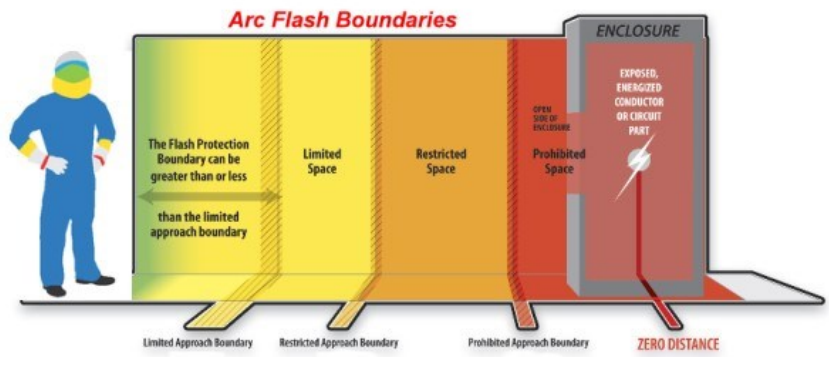
Incident energy and arc flash level are evaluated correctly, reduced risk

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



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