

This project was developed to SIEMENS during the years 1997 - 1998. Project was to improve the feed system of high voltage to USIMINAS in Ipatinga - MG.

### **In this project was established:**

- 2 transformers of 100 MVA, 230 / 69 kV installation;
- 2 bays line of 230 kV installation;
- 8 power transformers between 5 and 12 mVA, of 69/13,8 kV installation;
- 12 pulling ou of 69 kV in underground wires;
- 84 cubiculums of 11,5 kV installation;
- Brandnew substations installation to Self Oven of 69/11,5 kV, with 2 Power transformers 69/11,5 kV, 25 MVA and 4 cubiculum sets of 11,5 kV, totalizing 37 feeders;
- Entire protection system fitting and digital control of brandnew installations, including change of exist supervision system.

### **Eltman scope gathered the follow activities:**

- Protection and Control project for brandnew installations, including: unifiliars, functionals, triliars and logicals diagrams;
- Power and control cable connections, including: interconnection diagrams and cable lists;
- Points lists of entire digital system;
- Project for brand new equipments installation, including: electric layout - floor plan and cuts; Equipments installations;
- Soil loop;
- Illumination;
- Aerial Network;
- Effort on structure calculation;
- Electric conductors;
- Mechanic Project, including: Metalic structures and equipments support dimensioning;
- Civil project and architature, including: Civil construction layout, gutters and passage panels and equipment basis and portals.