

1. "Determining of regulation characteristics, load loss and actual P-Q diagrams for B1 and B2 units in Thermal Power Plant Kostolac B"

Ordered by: Public Utility "Thermal Power Plants and Mines Kostolac", Kostolac

Project Manager: Miloje Kostić, PhD.

Associates: Branka Kostić, MSc.

Project contains new operating charts for TGV360 generating units (P_G - Q_G curves) - B1 and B2 units in Thermal Power Plant Kostolac B. Emphasis is on their operation near reactive zone limits ($Q_G \geq Q_{G,N}$, $P_G \leq P_{G,N}$).

Project also contains results of calculation and analysis of dependence of excitation system current from reactive load level, in purpose to establish the highest level of reactive load which ensures determined requirements.

Size of Project: 57 pages

Finished in: 2010.

2. "Study of long-term prospective 10 kV network development for Vranje branch"

Ordered by: Public Utility "Jugoistok", Niš

Project Manager: Maja Marković, MSc.

Associates: Petar Kovačević, MSc.

Miroslav Stanković, MSc.

Saša Minić, MSc.

Danka Kecman, MSc.

Branka Kostić, MSc.

The objective of this study is development of prospective 110 kV, 35 kV and 10 kV networks in Vranje branch of Public Utility "Jugoistok", Niš for the period 2008 to 2030. The population of analyzed area at extreme south of Serbia is ~195000 and its size is 2400 km² (~125 MW annual active power peak, ~420 GWh consumption). Utility provides electrical energy for ~67000 consumers. As preparation for study, all relevant points in 10-110 kV network are tracked using GPS devices and transferred to GIS environment, based on previously digitalized georeferenced maps. Geographical data were also transferred for ~20000 consumers (their location and connection to supplying MV/LV substation). The study includes analyses of energy consumption development for the period up to the year of 2008 as well as load and energy consumption forecast until the year of 2030. Detailed analyses of 110 kV, 35 kV and 10 kV networks present condition (including physical state of networks, load of elements, voltage conditions and losses) have been accomplished.

Based on these analyses, results of load forecasting, techno-economical analyses and comparison of possible development variants, the most prosperous solution of distributive network further development in the considered area for the period up to the year of 2030 has been suggested. Initial network size: ~1020 MV/LV substations.

Size of Project: 533 pages

Finished in: 2010.

3. "Study of functioning, load forecast and middle-term prospective 10-110 kV network development for Kraljevo branch"

Ordered by: Public Utility "Elektrosrbija", Kraljevo

Project Manager: Ana Šaranović, MSc.

Associates: Dragan Dabić, MSc.

Igor Belić, MSc.

Nikola Šušnica, MSc.

Maja Marković, MSc.

Saša Minić, MSc.

The objective of this study is development of prospective 110 kV, 35 kV and 10 kV networks in Kraljevo branch of Public Utility "Elektrosrbija", Kraljevo for the period 2008 to 2030. The size of analyzed area is ~4500 km² (Kraljevo, Vrnjačka Banja, Raška and Novi Pazar). Utility provides electrical energy for ~127000 customers. As preparation for study, all relevant points in 10-110 kV network are tracked using GPS devices and transferred to GIS environment, based on previously digitalized georeferenced maps. Geographical data were also transferred for approximate half of customers of distribution area of Raška (their location and connection to supplying MV/LV substation), and ~80% of customers of distribution area of Novi Pazar. The study includes analyses of energy consumption development for the period up to the year of 2008 as well as load and energy consumption forecast until the year of 2030. Detailed analyses of 110 kV,

35 kV and 10 kV networks present condition (including physical state of networks, load of elements, voltage conditions and losses) have been accomplished.

Based on these analyses, results of load forecasting, techno-economical analyses and comparison of possible development variants, the most prosperous solution of distributive network further development in the considered area for the period up to the year of 2030 has been suggested. On the base of done analysis, if all proposed measures are taken, the achieved money saving can result ~43 000 € per year.

Size of Project: 666 pages

Finished in: 2010.

4. "Study of distribution network development for Republic Srpska"

Ordered by: UNIT-EM Ltd, Malta, Public Utility of the Republic of Srpska

Project Manager: Saša Minić, MSc.

Associates: Branislav Ćupić, MSc.

Miroslav Stanković, MSc.

Nikola Šušnica, MSc.

Mr Ivan Stanisavljević, MSc.

Tijana Janjić, MSc.

Mr Milan Ivanović, MSc.

The objective of this study is development of prospective 110 kV, 35 kV and 10 kV networks of Public Utility of the Republic of Srpska, Trebinje for the period 2008 to 2020. Utility provides ~2934 GWh electrical energy per year for ~533000 consumers. The study includes analyses of energy consumption development for the period up to the year of 2008 as well as load and energy consumption forecast until the year of 2020. Detailed analyses of 110 kV, 35 kV and 10 kV networks present condition (including physical state of networks, load of elements, voltage conditions and losses) have been accomplished. The study includes five offprints and each one contains analysis results of distribution network for five branches of Public Utility of the Republic of Srpska (Elektro-Bijeljina, Elektro-Doboj, Elektro-Hercegovina Trebinje, Elektrodistribucija Pale, Elektro-Krajina Banja Luka).

Based on these analyses, results of load forecasting, techno-economical analyses and comparison of possible development variants, the most prosperous solution of distributive network further development in the considered area for the period up to the year of 2020 has been suggested.

Size of Project: 1062 pages

Finished in: 2010.

5. "Long-term distribution network development plan up to 2025 in the area of Public Utility "Elektrodistribucija Beograd" – II phase "

Ordered by: Public Utility "Elektroprivreda Srbije", Belgrade

Project Manager: Gordana Radović, MSc.

Associates: Nada Vrcelj, MSc.

Tijana Janjić, MSc.

Saša Minić, MSc.

Study "Long-term distribution network development plan up to 2025 in the area of Public Utility Elektrodistribucija Beograd – II phase" represents extension of "Long-term distribution network development plan up to 2025 in the wider urban area of Public Utility Elektrodistribucija Beograd" from 2007. The area has ~800000 customers (in 2009) with consumption ~8000 GWh per year. Average growth rate in last seven years was ~2%. The study includes analyses of energy consumption development for the period up to the year of 2007 as well as load and energy consumption forecast until the year of 2025. Detailed analyses of 110 kV and 35 kV networks present condition have been accomplished.

Based on these analyses, results of load forecasting, techno-economical analyses and comparison of possible development variants, the most prosperous solution of distributive network further development in the considered area for the period up to the year of 2025 has been suggested.

Size of Project: 471 pages

Finished in: 2010.

6. "Study of long-term prospective 10-110 kV network development for Valjevo branch"

Ordered by: Public Utility "Elektrosrbija", Kraljevo
Project Manager: Danka Kecman, MSc.
Associates: Miroslav Stanković, MSc.
Branislav Čupić, MSc.
Saša Minić, MSc.
Mr Nada Vrceľj, MSc.
Mr Milan Ivanović, MSc.
Igor Belić, MSc.
Petar Kovačević, MSc.
Tijana Janjić, MSc.

The objective of this study is development of prospective 110 kV, 35 kV and 10 kV networks in Valjevo branch of Public Utility "Elektrosrbija", Kraljevo for the period 2008 to 2030. Utility provides electrical energy for ~67000 customers with consumption ~350 GWh per year. As preparation for study, most of points in 10-110 kV network are tracked using GPS devices and transferred to GIS environment, based on previously digitalized georeferenced maps. Geographical data were also transferred for about 50% customers (their location and connection to supplying MV/LV substation). The study includes analyses of energy consumption development for the period up to the year of 2008 as well as load and energy consumption forecast until the year of 2025. Detailed analyses of 110 kV, 35 kV and 10 kV networks present condition (including physical state of networks, load of elements, voltage conditions and losses) have been accomplished.

Based on these analyses, results of load forecasting, techno-economical analyses and comparison of possible development variants, the most prosperous solution of distributive network further development in the considered area for the period up to the year of 2025 has been suggested.

Size of Project: 416 pages
Finished in: 2010.

7. "Sizing of reactive power compensation on MV at 35/10 kV substations for Public Utility Elektrokosmet"

Ordered by: Public Utility "Elektrokosmet", Kosovska Mitrovica
Project Manager: Tijana Janjić, MSc.
Associates: Saša Minić, MSc.
Miloje Kostić, PhD.

The objective of this study is optimal sizing of reactive power compensation on medium voltage at 35/10 kV substations in Kosovska Mitrovica branch of Public Utility "Elektrokosmet", Kosovska Mitrovica. The study includes analyses of voltage-reactive states in 2009/2010 year. Proposed options in this study were based on voltage-reactive states detailed analysis, with respect of technical restrictions and availability of capacitors.

Size of Project: 19 pages
Finished in: 2010.

8. "Overview of complete connecting and technical terms analysis for connecting 19 small hydropower plants in the area of Piroć branch"

Ordered by: Public Utility "Jugoistok", Niš
Project Manager: Mr Milan Ivanović, MSc.
Associates: Tijana Janjić, MSc.
Saša Minić, MSc.
Miloje Kostić, PhD.

This study represents supplement to "Study of long-term prospective 10 kV network development for Piroć branch". Base for technical terms analysis was load level data from that study with modeling of all elements 10-110 kV of network which are realised in meantime, and with those who were planed in 2010. Distribution network with all met technical requirements for all small hydropower plants individually and simultaneously generating was formed.

Size of Project: 78 pages
Finished in: 2010.

9. "Analysis of the possibility of connection of the wind farm in the region of the villages of Ljubinje and Pečanica on to the electricity distribution network from the point of view of short-circuit power on the place of connection and the voltage circumstances in stationary regimes"

Ordered by: S.C. ELECTRAWINDS-S, Belgrade

Project Manager: Saša Minić, MSc.

Associates: Mr Milan Ivanović, MSc.

Subject of this report is analysis of connecting possibility for wind park in the area of villages Ljubinje and Pečanica from the standpoint of short circuit at connection point. This is parameter which dictates range of voltage changes at connection point in transition states during connecting or disconnecting power plant to network. Another subject of the report is analysis of connecting possibility considering range of voltage changes at stationary states depending on voltage at network treshold and load level during year.

Analysis was carried out for two types of generators: synchronous generator (6x1.8 MW) and Siemens SWT-2.3 VS (4x2.3 MW).

Size of Project: 15 pages

Finished in: 2011.

10. "Study of long-term 10-110 kV network development for Loznica branch"

Ordered by: Public Utility "Elektrosrbija", Kraljevo

Project Manager: Maja Marković, MSc., Vladimir Sovrlić, MSc.

Associates: Branka Kostić, MSc.

Ana Šaranović, MSc.

Dragan Dabić, MSc.

Saša Minić, MSc.

The objective of this study is development of prospective 110 kV, 35 kV and 10 kV networks in Loznica branch of Public Utility "Elektrosrbija", Kraljevo for the period 2008 to 2025. Utility provides electrical energy for ~63000 customers with consumption ~335 GWh per year. As preparation for study, most of points in 10-110 kV network are tracked using GPS devices and transferred to GIS environment, based on previously digitalized georeferenced maps. Geographical data were also transferred for about 42% customers (their location and connection to supplying MV/LV substation). The study includes analyses of energy consumption development for the period up to the year of 2008 as well as load and energy consumption forecast until the year of 2025. Detailed analyses of 110 kV, 35 kV and 10 kV networks present condition (including physical state of networks, load of elements, voltage conditions and losses) have been accomplished.

Based on these analyses, results of load forecasting, techno-economical analyses and comparison of possible development variants, the most prosperous solution of distributive network further development in the considered area for the period up to the year of 2025 has been suggested.

Size of Project: 440 pages

Finished in: 2010.

11. "Study of long-term prospective 35-110 kV network development for Valjevo, Lazaravac, Šabac and Loznica branches in Public Utility "Elektrosrbija" Kraljevo"

Ordered by: Public Utility "Elektroprivreda Srbije", Belgrade

Project Manager: Saša Minić, MSc.

Associates: Gordana Radović, MSc.

Danka Kecman, MSc.

Mr Milan Ivanović, MSc.

Maja Marković, MSc.

Vladimir Sovrlić, MSc.

Mr Ivan Stanisavljević, MSc.

Branislav Čupić, MSc.

Nada Vrcelj, MSc.

The objective of this study is development of prospective 110 kV and 35 kV networks in Valjevo, Lazarevac, Šabac and Loznica branches of Public Utility "Elektrosrbija", Kraljevo for the period 2008 to 2025 and review of some earlier solutions of network because of change of load development dynamic and its spatial distribution. Electrical energy consumption in all these branches is ~1400 GWh per year. The study includes analyses of energy consumption development for the period up to the year of 2008 as well as load and energy consumption forecast until the year of 2025. Detailed analyses of 110 kV and 35 kV networks present condition (including physical state of networks, load of elements, voltage conditions and losses) have been accomplished.

Based on these analyses, results of load forecasting, techno-economical analyses and comparison of possible development variants, the most prosperous solution of distributive network further development in the considered area for the period up to the year of 2025 has been suggested.

Size of Project: 363 pages

Finished in: 2010.

12. "Analysis of existing conditions in 35/10 kV substation Umka and possibility of connecting CHP plant at cardboard factory Umka "

Ordered by: MT-KOMEX, Belgrade

Project Manager: Mr Milan Ivanović, MSc.

Associates: Gordana Radović, MSc.

The objective of this study is reviewing possibility of connecting plant for cogeneration, whose construction is planned in the factory Umka, to distributive network of Public Utility "Beograd". From the standpoint of capital required for the construction and currently applicable purchase price which is guaranteed for privileged producers, the most economical cogeneration plant was selected.

Size of Project: 42 pages

Finished in: 2010.