AMENDMENT No. 3

to the

Contract Agreement No BIDSF-020-02-01-00

Substation Bystričany – transformation 400/110 kV, Substation Horná Ždaňa – enlargement, Substation Križovany – enlargement

Financed by

Bohunice International Decommissioning Support Fund (BIDSF), administered by the European Bank for Reconstruction and Development (EBRD)

This Amendment No. 3 to the Contract made between:

Slovenská elektrizačná prenosová sústava, a.s.
Mlynské nivy 59/A,
824 84 Bratislava,
Slovak Republic

IČO:	35 829 141
Tax-No.:	2020261342
VAT reg. No.:	SK2020261342
Bank:	Tatra banka, a.s., IBAN: SK30 1100 0000 0026 2019 1900 SWIFT: TATRSKBX
Statutory body:	Board of Directors, represented by: Ing. Miroslav Obert, Chairman of Board of Directors Ing. Miroslav Stejskal, Vice-chairman of Board of Directors
Registered:	in the Commercial Register of Bratislava I District Court, Section: Sa, Insert No.: 2906/B

Person responsible to negotiate the technical issues: Mr. Ľubomír Maco
Person responsible to negotiate the contractual issues: Mrs. Anna Szer

(hereinafter called "the Employer") of the one part

and

Association SPIE Elektrovod, a.s. – Alter Energo, a.s.
Head of the Association:
SPIE Elektrovod, a.s.
Prievozská 4C,
824 66 Bratislava 26,
Slovak Republic

IČO:	36 863 513
Tax-No.:	2022840127

VAT reg. No.:	SK2022840127
Bank:	Tatra banka, a.s., IBAN: SK26 1100 0000 0026 2004 0555 SWIFT: TATRSKBX
Statutory body:	Board of Directors, represented by: Ing. Milan Ferenc, PhD., Member of Board of Directors Ing. Helena Kořanová, Member of Board of Directors
Registered:	in the Commercial Register of Bratislava I District Court, Section: Sa, Insert No.: 5058/B

(hereinafter called "the Contractor") of the other part.

Whereas:

(A) The inconsistencies occurred in determining values of The Approved Variation to the Contract, series I (consisting of Variation Orders 2; 4,2; 5; 8; 12 and 13) as incorporated into the contract through Amendment No.2 require rectification through formal contract amendment;

(B) The Engineer made determinations regarding Variations to the Contract, namely:

i. Variation Order No.1 resulting from Changes to the Employer's Requirements: On 16 February 2017, the Tree Felling Permit No.2813/2017 was provided by the Employer to the Contractor and the Contractor was requested to comply with the requirement specified in Tree Felling Permit;

ii. Variation Order No.3 resulting from the Contractor's proposal to improve efficiency of the Facility and to ensure safe operation of the completed facility (change of post insulators);

iii. Variation No 04.1 resulting from Changes to the Employer's Requirements: by letter dated 10 July 2017, the Employer informed the Contractor regarding the update of its operating procedures and requested the Contractor to adapt the distance protection equipment;

iv. Variation No 7 resulting from inadequate DDT: during Progress meeting conducted on 10 October 2017, the Contractor informed the Employer about identified unsuitable bearing capacity of soil;

v. Variation No 9 resulting from inadequate DDT: during Progress meeting conducted on 10 October 2017, the Contractor informed the Employer about unforeseen soil condition (unexpected discovery of large landfill of building blocks and construction waste during excavation works)

vi. Variation Order 10 resulting from Changes to the Employer's Requirements: the Employer issued new Internal standard IS-021 in December 2017 and requested the Contractor to modify design and construction of the cable ducts;

vii. Variation Order 16 resulting from Changes to the Employer's Requirements: the Employer issued new Internal standard IS-021 in December 2017 and requested the Contractor to modify SO312 substation Drainage.

(C) The necessary changes resulting from the above issues need to be incorporated into the Contract provisions.

The Employer and the Contractor agree to amend the Contract through the

Amendment No. 3 as follows:

1. In this Amendment No. 3 words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.

2. This Amendment No. 3 shall supersede the Amendment No. 2 and the Contract Agreement.

3. The Contract Agreement shall be amended as follows:

   3.1 In article 2 delete the words:

   "*a) Amendment No. 2 including Annex 1, Annex 2 and Annex 3 to Amendment No. 2,*
   (b) Amendment No. 1,
   (c) The Contract Agreement,
   (d) The Letter of Acceptance, dated 20 December 2016,
   (e) The Letter of Tender, dated 23 September 2016,
   (f) The Particular Conditions of Contract,
   (g) The General Conditions of Contract,
   (h) The Employer's Requirements,
   (i) The completed Price Schedules, Data Sheets and Schedules of Requirements,
   (j) The Contractors Tender with Appendices."

   and replace them with words:

   "*(a) Amendment No. 3 including Annex 1, Annex 2, Annex 3, Annex 4 and Annex 5 to Amendment No. 3*
   (b) Amendment No. 2 including Annex 1, Annex 2 and Annex 3 to Amendment No. 2,
   (c) Amendment No. 1,
   (d) The Contract Agreement,
   (e) The Letter of Acceptance, dated 20 December 2016,
   (f) The Letter of Tender, dated 23 September 2016,
   (g) The Particular Conditions of Contract,
   (h) The General Conditions of Contract,
   (i) The Employer's Requirements,
   (j) The completed Price Schedules, Data Sheets and Schedules of Requirements,
   (k) The Contractors Tender with Appendices."

   Addenda shall have the order of precedence of the document they are modifying.

   3.2 Delete text of article 4 and replace with the following text:

   "*The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein the*

amount of:

14 986 289,79 EUR
(fourteen million nine hundred and eighty six thousand two hundred and eighty nine Euros and seventy nine Cents)

or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract. VAT and other taxes shall not be paid on the funds originating from BIDSF funds."

4. The Employer's Requirements shall be supplemented with the following:

"The Engineer's Determination and Table of Rectified Values of the Approved Variations to the contract, series I (consisting of Variation Orders 2; 4.2; 5; 8; 12 and 13), as provided in Annex 1 to Amendment No. 3;

The Engineer's Determinations of the Approved Variations to the Contract, series II (consisting of Variation Orders 1; 3; 4.1; 7; 9; 10 and 16), as provided in Annex 2 to Amendment No. 3;

Table of the Approved Variations to the Contract, series II (consisting of Variation Orders 1; 3; 4.1; 7; 9; 10 and 16), as provided in in Annex 3 to Amendment No. 3;

The Approved Variations to the contract, series II (consisting of Variation Orders 1; 3; 4.1; 7; 9; 10 and 16), as provided in Annex 4 to Amendment No. 3;

All the above shall be duly incorporated into the Employers Requirements and shall supersede respective provisions provided therein."

5. The completed Price Schedules, Data Sheets and Schedules of Requirements shall be supplemented with the following:

"The Engineer's Determination and Table of Rectified Values of the Approved Variations to the contract, series I (consisting of Variation Orders 2; 4.2; 5; 8; 12 and 13), as provided in Annex 1 to Amendment No. 3;

The Engineer's Determinations of the Approved Variations to the Contract, series II (consisting of Variation Orders 1; 3; 4.1; 7; 9; 10 and 16), as provided in Annex 2 to Amendment No. 3;

Table of the Approved Variations to the Contract, series II (consisting of Variation Orders 1; 3; 4.1; 7; 9; 10 and 16), as provided in in Annex 3 to Amendment No. 3;

The Approved Variations to the contract, series II (consisting of Variation Orders 1; 3; 4.1; 7; 9; 10 and 16), as provided in Annex 4 to Amendment No. 3;

Contract Price Increase Summary as provided in Annex 5 to Amendment No. 3

All the above shall be duly be incorporated into the completed Price Schedules, Data Sheets and Schedules of Requirements and shall supersede respective provisions provided therein."

6. Since Slovenská elektrizačná prenosová sústava, a.s. is the obliged person pursuant to the Slovak Act No. 211/2000 Coll. on free access to information (hereafter as "Act on free access to information") and since this legal obligation is to be fulfilled regardless of the governing law of the agreement, the Parties to

this Contract are informed, that this Amendment No. 3 and related tax documents will be published as foreseen in the Act on free access to information in § 5a and § 5b for agreements, orders and invoices.

7 All other terms and conditions unaffected by this Amendment No. 3 shall remain unchanged.

8. This Amendment No. 3 is made in four counterpart originals, two of them for each part of the Contract Agreement.

In Witness whereof the parties hereto have caused the Amendment No. 3. This Amendment No. 3 becomes valid and legally binding from the day of the last party has signed it and effective from the day following the day of the publication of the Contract pursuant to § 47a section 1 of the Act No. 40/1964 Coll. (Civil Code).

SIGNED by:

Ing. Miroslav Obert
Chairman of the Board
Slovenská elektrizačná prenosová sústava, a.s.

Date: _____
for and on behalf of the Employer

SIGNED by:

Ing. Milan Ferenc, PhD.
Member of the Board
SPIE Elektrovod, a.s.

Date: _____
for and on behalf of the Contractor

SIGNED by:

Ing. Miroslav Stejskal
Vice-chairman of the Board
Slovenská elektrizačná prenosová sústava, a.s.

Date: _____
for and on behalf of the Employer

SIGNED by:

Ing. Helena Kořanová
Member of the Board
SPIE Elektrovod, a.s.

Date: _____
for and on behalf of the Contractor

Annex 1 to Amendment No. 3

The Engineer's Determination and Table of Rectified Values of the Approved Variations to the contract, series I (consisting of Variation Orders 2; 4.2; 5; 8; 12 and 13)

intec
GOPA International Energy Consultants

Date: 12 August 2019

ENGINEER`S DETERMINATION

Project: Bystričany Substation - Transformation 400/110kV; Horná Ždaňa Substation – Enlargement; Križovany Substation - Enlargement

Subject: **The Approved Variation to the Contract, series I:**

- **Variation Order No.2**
- **Variation Order No.4.2**
- **Variation Order No.5**
- **Variation Order No.8**
- **Variation Order No.12**
- **Variation Order No.13**

Contract Reference: GCC Clause 3.5 [Determinations] and GCC 13 [Variations and Adjustments] as amended by PCC Clauses 13.1 and 13.3

Variation Classification: Rectification of determined values for Variation Orders 2; 4.2; 5; 8; 12; 13

Reason: Determined values for Variation Orders 2; 4.2; 5; 8; 12; 13 shall be revisited to ensure the values are determined in a consistent manner with full adherence of the contract provisions.

Rationale/Brief Description:

Upon approving Variation Orders the Engineer proceeded in accordance Sub-Clause 3.5 [Determinations] and agreed adjustments to the Contract Price for The Approved Variation to the Contract, series I (Variation Orders 2; 4.2; 5; 8; 12 and 13) which subsequently were duly incorporated into the Contract through formal Amendment No.2 signed by the Employer and the Contractor. In accordance with the Clause 13.3 the adjustments to the Contract price shall include a reasonable profit, and shall take into account the Contractor's submissions under Clause 13.2 [Value Engineering]. It is noted that the adjustments to the contract price through the determined values for Variation Orders 2; 4.2; 5; 8; 12 and 13 adequately took into account Contractor's submissions under Clause 13.2; however, instead of reasonable profit, as required by this Clause 13.3, the processing fee has been applied. It is also noted that processing fee was not applied in consistent manner as the determined values for the Variation Order 2; 4.2; 5; 8; 12 and 13 included different processing fees in the range of 0% to 7.20%. Namely:

Variation Order No.	Processing Fee (%)	Reasonable profit according to PCC 1.2 (%)
2	6.43	5.00
4.2	0.00	5.00
5	3.11	5.00
8	3.55	5.00
12	7.20	5.00
13	3.55	5.00

Considering that the Adjustment to the Contract Price shall include a reasonable profit, which is defined in the contract in the amount of 5% of costs, and that the application of the processing fee is not envisaged in the contract, the determined values for Variation Orders 2; 4.2; 5; 8; 12 and 13 require rectification.

Eligibility:

In order to ensure that the values of all variation orders under the contract are determined in a consistent manner with full adherence of the contract provisions the Employer/Engineer considers that values of Variation Orders 2; 4.2; 5; 8; 12 and 13 shall be re-visited and adjusted according to the provisions of GCC Clause 13.3 [Variation Procedure].

Conclusion / Recommendation/Determination:

Variation Order 2: previously determined value of €30,646.16 shall be adjusted by deducting the processing fee of 6.43% in the amount of €1,854.00 and adding 5% profit in the amount of €1,439.61 resulting in new value of VO-2 value of €30,231.77.
Variation Order 4.2: previously determined value of € 12,606.00 shall be adjusted by adding 5% profit in the amount of €630.30 resulting in new value of VO-4.2 value of €13,236.30.
Variation Order 5: previously determined value of € 20,652.93 shall be adjusted by deducting the processing fee of 3.11% in the amount of €630.00 and adding 5% profit in the amount of €1,001.15 resulting in new value of VO-5 value of €21,024.08.
Variation Order 8: previously determined value of € 58,660.53 shall be adjusted by deducting the processing fee of 3.55% in the amount of €2,011.05 and adding 5% profit in the amount of €2,832.47 resulting in new value of VO-5 value of €59,481.95.
Variation Order 12: previously determined value of € 131,500.79 shall be adjusted by deducting the processing fee of 7.20% in the amount of €8,832.14 and adding 5% profit in the amount of €6,133.43 resulting in new value of VO-5 value of €128,802.08.
Variation Order 13: previously determined value of € 136,476.16 shall be adjusted by deducting the processing fee of 3.55% in the amount of €4,678.80 and adding 5% profit in the amount of €6,589.87 resulting in new value of VO-5 value of €138,387.23.

Accordingly, the total value of all Variation Orders 2; 4.2; 5; 8; 12 and 13 shall be revised to **€391,163.41** and shall replace previously determined total value of €390,542,57.

Detailed calculation and comparison of determined values between the Amendment No 2 and this determination is provided in Annex 2.

In view of the above, the Engineer considers that the adjustments to the previously determined values of Variation Orders 2; 4.2; 5; 8; 12 and 13 as determined above are necessary to ensure consistent approach upon which the values are determined. The Engineer therefore recommends that the previously occurred inconsistency in determining values for Variation Orders 2; 4.2; 5; 8; 12; 13 is rectified through formal contract amendment that shall incorporate the revised values for Variation Orders 2; 4.2; 5; 8; 12; 13 as determined above and the Contract Price shall be adjusted accordingly.

Bernard Bolton
Project Manager Bratislava

Annexes:

1. Detailed calculation and comparison of determined values between Amendment 2 and this determination

Detailed calculation and comparison of determined values between Amendment 2 and this determination

Amendment 2				Approved in Amendment 2			After PPC 1.2 appplication - Amendment 3			Comparison	
VO no.	Price under Contract	Revised estimation	Cost Difference.	FEE %	Fee	total	Profit %	Profit	total	Profit	total
2	-104 300,21 €	133 092,37 €	28 792,16 €	6,43%	1 854,00 €	30 646,16 €	5,00%	1 439,61 €	30 231,77 €	-414,39 €	-414,39 €
4.2	-260 880,69 €	273 486,69 €	12 606,00 €	0,00%	0,00 €	12 606,00 €	5,00%	630,30 €	13 236,30 €	630,30 €	630,30 €
5	-200 637,04 €	220 659,97 €	20 022,93 €	3,11%	630,00 €	20 652,93 €	5,00%	1 001,15 €	21 024,08 €	371,15 €	371,15 €
8	-1 404 574,57 €	1 461 224,05 €	56 649,48 €	3,55%	2 011,05 €	58 660,53 €	5,00%	2 832,47 €	59 481,95 €	821,42 €	821,42 €
12	-305 801,60 €	428 470,25 €	122 668,65 €	7,20%	8 832,14 €	131 500,79 €	5,00%	6 133,43 €	128 802,08 €	-2 698,71 €	-2 698,71 €
13	-260 880,69 €	392 678,05 €	131 797,36 €	3,55%	4 678,80 €	136 476,16 €	5,00%	6 589,87 €	138 387,23 €	1 911,07 €	1 911,07 €
					18 005,99 €	**390 542,57 €**		18 626,83 €	**391 163,41 €**	**620,84 €**	**620,84 €**

Annex 1 to Amendment No. 3

Project: Substation Bystričany - transformation 400/110 kV / Rozvodňa 400 kV Bystričany
Substation Horná Ždaňa - enlargement / Rozvodňa 400 kV H. Ždaňa - rozšírenie
Substation Križovany - enlargement / Rozvodňa 400 kV Križovany - rozšírenie

Table of Rectified Values of The Approved Variations to the Contract, series I/ Tabuľka upravených hodnôt schválených zmenových návrhov, séria I

No. / č.	Title / Názov	Price / Cena EUR
Variation Order No. 2	SO 681 Temporary access road of site transport, Horná Ždaňa / SO 681 Dočasná prístupová komunikácia staveniskovej dopravy, Horná Ždaňa	30 231,77
Variation Order No. 4.2	ČPS 30.3 Electric protections, Horná Ždaňa / ČPS 30.3 Zmena špecifikácie elektrických ochrán, Horná Ždaňa	13 236,30
Variation Order No. 5	SO 313 Retaining wall, Horná Ždaňa / SO 313 Oporný múr, Horná Ždaňa	21 024,08
Variation Order No. 8	PS 07 400 kV Switchyard - Increase in weight of gantry steel, Horná Ždaňa / PS 07 Rozvodňa 400 kV - Nárast hmotnosti oceľovej konštrukcie, Horná Ždaňa	59 481,95
Variation Order No. 12	SO 522 400 kV Switchyard - Foundations, Horná Ždaňa / SO 522 Rozvodňa 400 kV - Základy, Horná Ždaňa	128 802,08
Variation Order No. 13	ČPS 30.3 Digital Protections - Busbar differential protection replacement, Horná Ždaňa / ČPS 30.3 Elektrické ochrany - Výmena rozdielovej ochrany prípojníc, Horná Ždaňa	138 387,23
Total – Approved Variations to the Contract, series I / **Spolu** – Schválené Zmenové návrhy, séria I		**391 163,41 €**

Annex 2 to Amendment No. 3

The Engineer's Determinations of the Approved Variations to the Contract, series II (consisting of Variation Orders 1; 3; 4.1; 7; 9; 10 and 16)

intec
GOPA International Energy Consultants

Date: 12 August 2019

ENGINEER`S DETERMINATION

Project: Substation Bystričany – Transformation 400/110 kV; Horná Ždaňa Substation – Enlargement; Križovany Substation – Enlargement

Engineer's General Comments to Contractor's Requests for Variations Orders

Contract Reference:
General Conditions of Contract (GCC) Clause 13 as amended by the Particular Conditions of Contract (PCC) Clauses 13.1 and 13.3.

List of used abbreviations:

GCC - General Conditions of Contract
PCC - Particular Conditions of Contract
DDT – Detail Design for Tendering
DDI – Detail Design for Implementation
ER – Employers Requirements
VO – Variation Order

General comments:

The Requests for Variation Orders (VO's) arose during the implementation design phase and during the execution of civil and electrical works. In most cases, the variations are based on conflicts between actual circumstances and those indicated in the Tender Documentation, or even not indicated at all.

The Engineer has checked all the submitted VO's using the following criteria:

- Eligibility of the VO, i.e. checking if the required supplies and services are covered by the Contract or not;
- Is the VO covering an additional requirement from Employer's side or is it part of the specified re-construction works?
- Technical solution and justification of Contractor's proposal;
- Price schedules and price calculations.

When, during review of a VO, it turned out that a claim was not justified because the supplies and/or services are covered by the Contract, the VO in question was rejected and excluded from the list of VO's presented for financing.

So far, the following VO's have been approved by the Engineer and Employer and are submitted to EBRD for Non-Objection:

- VO No 01 Trees Felling, Bystričany	€ 8.563,31
- VO No 03 Post Insulators, Bystričany	€ 15.499,58
- VO No 04 Part 1 - ČPS 30.3 Electric protections Bystričany	€ 19.854,45
- VO No 07 Soil replacement, Bystričany	€ 329.826,72
- VO No 09 Rubble removal, Bystričany	€ 174.925,92
- VO No 10 Cable routes, Bystričany	€ 123.700,04
- VO No 16 400kV Switchyard drainage, Bystričany	€ 22.651,80

The total value of the above variations amounts to **€ 695.021,82**

In all cases, the prices reached during negotiations with the Contractor are considered reasonable.

After the prices agreed between the Contractor and Employer were found suitable by the Engineer (Amendment to PCC Clause 13.3), he recommends the acceptance of the Variation Orders.

These additional works are over and above the original contractual scope of work and are considered necessary from an engineering point of view as vital for the satisfactory completion of the project in accordance with the contractual time schedule. Therefore, all the justified changes caused by the construction works for this project are recommended by the Engineer as eligible.

intec
GOPA-International Energy Consultants GmbH

Bernard Bolton
Project Manager, Bratislava

intec
GOPA International Energy Consultants

Date: 12 August 2019

ENGINEER`S DETERMINATION

Project: Bystričany Substation - Transformation 400/110kV; Horná Ždaňa Substation – Enlargement; Križovany Substation - Enlargement

Individual Project 1: Substation Bystričany – Transformation 400/110kV

Subject: SO311 Earth Works – Trees Felling
Engineer's Determination on Contractor's Request/Proposal for the Variation no. 1

Contract Reference: GCC Clause13 [Variations and Adjustments] as amended by PCC Clauses 13.1 and 13.3

Variation Classification: Additional Scope of Work requested by the Employer subject to GCC Clause 13.1 [Right to Vary]

Reason: The Tree Felling Permit No.2813/2017 dated 8 February 2017 issued by the Local Authority in Bystričany identified higher than originally envisaged number of trees to be cut to ensure safe implementation of the construction works under the Project.

Rationale/Brief Description:

The final decision for the Tree Felling Permit of the Local Authority in Bystričany No. 2813/2017, was issued on 8 February 2017, one day after the Effective Date of the Contract (7 February 2017), based on (i) the Dendrological Survey of Bystričany substation conducted by an independent agency and (ii) Resolution of Bystričany Municipality. The Employer was not aware of the date this survey had to be carried out by the independent agency and became aware of the outcomes and data contained in this survey at the time Tree Felling Permit No.2813/2017 was issued. This permit was handed over by the Employer to the Contractor during the Kick-off Meeting held on 16 February 2017.

The original Contract/Price Schedules specified the amount of 67 trees to be felled, while the Dendrological Survey identified 348 trees to be felled under this Contract, i.e. in order to ensure safe implementation of the construction works under this contract the Contractor is required to fell 281 more trees than originally identified in the contract.

The Engineer, by letter dated 18 February 2017 instructed a Variation requesting the Contractor to submit a Proposal for Variation according to GCC Clause 13 [Variations and Adjustments]. The Contractor presented his first draft version of the Proposal for Variation (Variation Order No.1,) on 14 March 2017. Following scrutiny and review of the Proposal by the Engineer and subsequent determinations in accordance with the provisions of PCC 13.3, the Contractor prepared an updated version of the Variation Order no.1 SO 311 "Earth Works – Tree Felling" and submitted to the Engineer on 31 May 2017 (Annex 1) for its final review and approval.

The total price under the Contract for the original scope "Earth Works -Tree Felling" was €30.613,25 and the revised estimation as per the Contractor's Proposal is €38.768,78 (detailed price breakdown as proposed by the Contractor is included in Annex 1 - Variation Order no.1 SO 311 "Earth Works – Tree Felling"), thus increase of cost for the scope is €8,155.53.

In accordance with the provisions of Clause 13.3 [Variation Procedure], the adjustments to a Contract Price shall also include reasonable profit as defined in PCC 1.2, therefore the amount of €407.78 representing 5% profit from the cost of the increased scope is calculated.

Eligibility:

The Tree Felling Permit No.2813/2017 dated 8 February 2017, issued by the Local Authority in Bystričany, enhances the safe implementation of the construction and satisfactory completion of the project as it specifically deals with trees which can obstruct the construction process (for further details see annex 1). The requirements imposed by the Permit impacted the scope of the Contractor and the contractor had to undertake additional works which the Contractor was not aware of during the tendering process or at the time the contract was signed. Therefore, the Employer/Engineer considers this variation to be eligible for application under GCC Clause 13 [Variations and Adjustments]. Implementation of this variation has no impact on overall completion date.

Conclusion / Recommendation:

The tree felling shall be executed in accordance with the approved design documentation and in compliance with the requirements of Tree Felling Permit No. 2813/2017 dated 8 February 2017 as submitted to the Contractor during the Kick-Off Meeting.

The technical documentation of the new solution submitted by the Contractor with the Request for Variation Order no.1 (as presented under Annex 1) has been checked, approved and found eligible under GCC Clause 13 by the Employer/Engineer.

Following the acceptance of the new technical solution, the Engineer checked the cost proposal submitted by the Contractor. In determining the costs of this Variation, all additions to the scope were valued at the rates and prices set out in the Contract (Price Schedules), and, where necessary, from other reliable sources (specifically, UNIKA 2018 price list).

The table below summarizes the additional amount to which the Contractor is eligible to claim under this Variation No.1:

The Engineer considers that the price adjustment agreed between the Contractor and Employer is adequate and, as the additional works detailed are considered necessary for the safe implementation of the construction and satisfactory completion of the project, the Engineer therefore recommends acceptance of the Proposal/Request for Variation Order no.1 as eligible, in the amount of **€8.563,31**,

Bernard Bolton
Project Manager Bratislava

Annexes:

1. Variation order no.01 SO 311 Earth works – Tree Felling

intec
GOPA International Energy Consultants

Date: 12 August 2019

ENGINEER`S DETERMINATION

Project: Bystričany Substation - Transformation 400/110kV; Horná Ždaňa Substation – Enlargement; Križovany Substation - Enlargement

Individual Project 1: Substation Bystričany – Transformation 400/110kV

Subject: PS 07 Distribution 400kV – Post insulators
Engineer's Determination on Contractor's Request for the Variation Order no. 3

Contract Reference: GCC Clause13 as amended by PCC Clauses 13.1 and 13.3.

Variation Classification: Contractor's proposal to improve efficiency of the Facility and to ensure safe operation of the completed facility.

Reason: The originally envisaged bearing load of post insulators has been determined to be insufficient to ensure safe operation of the completed facility.

Rationale/Brief Description:

By email dated 13 April 2017, the Contractor informed the Engineer / Employer regarding results of the calculation of static and dynamic load on post insulators (see Annex 1), stating that the bearing strength of 39 out of the 51 post insulators, as defined in DDT, is not sufficient for the safe operation of the completed facility. The Contractor's calculations of static and dynamic loads on post insulators were based on the layout and type of equipment as specified in DDT. Calculations, however, revealed that if types of post insulators identified in DDT were used, it will not be safe to operate the completed facility unless type of the post insulators specified in the DDT is adjusted to meet the required static and dynamic load on post insulators.

In Detail Design for Tendering (DDT) the value of static and dynamic load on post insulators was assessed according to the standard STN EN 60865-1. During the development of Detail design for Implementation (DDI) forces on post insulators no.1-12 (see FIG. 1, 2 in the attached documents "Variation Order no. 3 "PS 07 Distribution 400kV"") and post insulators no.1-10 (see FIG no.3, 4 in the attached documents "Variation order no. 3 PS 07 Distribution 400kV") in bays ACA08-ACA09 were calculated. The result indicates that the 4 kN load limit considered in DDT is not sufficient. Therefore, the original C4 type post insulator, considered in the DDT, shall be replaced with the C8 type post insulator to increase the load limit from 4kN to 8kN in order to ensure safety and reliable operation

After reviewing the reasons, the Engineer, by letter dated 23 July 2017, instructed the Contractor to prepare the Proposal for Variation according to GCC chapter 13 [Variations and Adjustments]. The Contractor presented his Proposal for Variation (Variation Order No. 3), first draft version, on 11 August 2017. Following scrutiny and review of the Proposal by the Engineer and subsequent determinations in accordance with the provisions of PCC 13.3 [Variation Procedure], the Contractor prepared an updated version of the Variation Order no.3 "PS 07 Distribution 400kV" and submitted to the Engineer on 19 December 2017 (Annex 1) for its final review and approval.

The total price under the Contract for original scope "PS 07 Distribution 400kV" was €31.980,00 and the revised estimation as per the Contractor's Proposal is €46.741,50, (price breakdown as proposed by the Contractor is included in the Annex 1 "Variation Order no.03 PS 07 400kV Substation – Post insulators"), an increase of cost for the additional scope is €14.761,50.

In accordance with provisions of Clause 13.3 [Variation procedure], the adjustments to a Contract Price shall also include reasonable profit as defined in PCC 1.2, therefore the amount of €738,08 representing 5% profit from the cost of the increased scope is calculated.

Eligibility:

As the technical solution proposed by the Contractor will improve the efficiency of the facility and will ensure safe operation of the completed facility, the Employer/Engineer determines that this variation falls within the GCC Clause 13 [Variations and Adjustments].

Conclusion / Recommendation:

The technical documentation of the new solution submitted by the Contractor with the Request for Variation Order no.3 has been checked, approved and found eligible under GCC clause 13.2. by the Employer/Engineer.

Following the acceptance of the final technical solution, the Engineer checked the cost proposal submitted by the Contractor. In determining the cost of this Variation, all additions/deductions to the scope were valued at the rates and prices set out in the Contract (Price Schedules), and, where necessary, from other reliable sources (namely, UNIKA 2018 price list),

Calculations for Variation no.3:

The Engineer considers that the price adjustment agreed between the Contractor and Employer is adequate, and, as the proposed adjustment of the post insulators result in the improvement of the efficiency and safe operation of the Facility, the Engineer therefore recommends acceptance of the Request for Variation Order no.3 as eligible, in the amount of **€15,499.58**.

Bernard Bolton
Project Manager Bratislava

Annexes:

1. "Variation order no.03 PS 07 Distribution 400kV – Post insulators"

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GOPA International Energy Consultants

Date: 12 August 2019

ENGINEER`S DETERMINATION

Project: Substation Bystričany - Transformation 400/110kV; Horná Ždaňa Substation – Enlargement; Križovany Substation - Enlargement

Individual Project 1: Substation Bystričany - Transformation 400/110kV

Subject: ČPS 30.3 Electrical Protections
Engineer's Determination on Contractor's Proposal/Request for Variation Order no. 04 Part 1
Contract Reference: GCC Clause13 [Variations and Adjustments] as amended by PCC Clauses 13.1 and 13.3.

Variation Classification: Changes to the Employer's Requirements

Reason: The Employer has amended Employer's Requirements; Operation Procedures – in order to ensure safe operation, the adoption of the distance of protection equipment was requested

Rationale/Brief Description:

By letter dated 10 July 2017, the Employer informed the Contractor that the Employer had updated its Operation Procedure PI no. 933-7-2 as well as related internal standards and requested the Contractor to modify the distance protection equipment from that originally defined in the Employer's Requirements.

The update of the Employers Operation Procedure PI no. 933-7-2: "Renovation of Power Transmission System of Slovak Republic" results into the requirement to add a 3rd W3 busbar into the substation. The Operation Procedures provided during the tendering process and at the time DDT was prepared and/or contract was signed, defined operation of substations with 2 busbars. The update of the Operation Procedures was necessary due to power system requirements (higher demands for power transmission) which require substations to have 3 busbars to ensure readiness of the equipment for operation. Such requirement provides more options for manipulation of 400kV equipment (i.e. switching 400kV bays, distributing load over the busbars, creation of independent power supply, outages, maintenance options) higher safety of power supply from important sources to consumption, better possibilities for maintenance. Operation of substation with 3 busbars creates more signals and commands (inputs, outputs, signalling) received or sent by protection devices.

Each distant protection device therefore shall be modified as follows (differences between DDI and DDT):

- The module 1x IO208 shall be added,
- The module 2xIO205 without LED shall be replaced with 2 modules IO207 with LED signalling,
- The module 2xIO207 with LED signalling shall be added,
- 125FB shall be added.

As a result, by letter dated 23 July 2018, the Engineer instructed a Variation requesting the Contractor to prepare a proposal for Variation according to GCC Clause 13 [Variations and Adjustments]. The Contractor presented the first draft of his Proposal for Variation (Variation Order No. 04 Part 1), on 8 August 2017. Following review and scrutiny of the Proposal by the Engineer and subsequent determinations in accordance with the provisions of PCC 13.3, the Contractor prepared an updated version of the Variation Order no.04 Part 1 "ČPS 30.3 Electrical Protection" and submitted to the Engineer on 30 June 2018 (Annex 1) for its final review and approval.

The price under the Contract for the originally envisaged scope was €39.738,00 and the revised estimate as per the Contractor's Proposal is €58.647,00 (price breakdown as proposed by the Contractor is included in Annex 1 "Variation Order no.04 Part 1 ČPS 30.3 Electrical Protection"), this increase of cost for the scope is **€18.909,00**

In accordance with the provisions of Clause 13.3 [Variation Procedure], the adjustments to a Contract Price shall also include reasonable profit as defined in PCC 1.2, therefore the amount of €945.45 representing 5% profit from the cost of the increased scope is calculated.

Eligibility:

The Employer/Engineer found the variation eligible for application under GCC clause 13 [Variations and Adjustments], since this solution ensures the Employer's compliance with the power system requirements and falls within the provisions of GCC clause 13.2, namely item (ii) reduces cost of maintenance and item (iii) provides improvement to the efficiency and value to the Employer,

Conclusion / Recommendation:

The technical documentation provided as per to Variation Order No 04 Part 1 and describing the modification of the distant protection system is compliant with the Employer's updated Operating Procedures and has been checked, approved and found eligible under GCC Clause 13 [Variations and Adjustments] by the Employer/Engineer.

Following the acceptance of the final technical solution, the Engineer checked the cost proposal submitted by the Contractor. In determining the cost of this Variation, all additions / deductions to the scope were valued at the rates and prices set out in the Contract (Price Schedule), and, where necessary, from other reliable sources (namely, UNIKA 2018 price list). Costs are summarised in the table below:

Calculations for Variation no.4.1:

The Engineer considers the price adjustment agreed between the Contractor and Employer is adequate, and, as the additional works will reduce the cost of maintenance and provide improvement to the efficiency and value to the Employer as well as will ensure safe operation of the facility, the Engineer, therefore, recommends acceptance of the Proposal/Request for Variation Order no. 04 Part 1 as eligible, with the total additional value of **€ 19,854.45.**.

Bernard Bolton
Project Manager Bratislava

Annexes:

1. Variation order no.04.1 ČPS 30.3 Electrical Protections

intec
GOPA International Energy Consultants

Date: 12 August 2019

ENGINEER`S DETERMINATION

Project: Bystričany Substation - Transformation 400/110kV; Horná Ždaňa Substation – Enlargement; Križovany Substation - Enlargement

Individual Project 1: Substation Bystričany – transformation 400/110kV

Subject: SO311 Ground works
Engineer's Determination on Contractor's Proposal/Request for the Variation Order no. 7

Contract Reference: GCC Clause13 [Variations and Adjustments] as amended by PCC Clauses 13.1 and 13.3.

Variation Classification: Inadequate DDT

Reason: Unsuitable bearing capacity of soil identified.

Rationale/Brief Description:

The DDT defined that soil excavated from the site of the new substation shall be used by the Contractor for raising the ground level and for formation of an embankment at the edges of the site. However, prior to commencement of excavation works the Contractor had to perform the Static and Dynamic geotechnical measurements to establish the suitability of the soil before construction could have been commenced. Although the DDT stated that soil compaction values will be **Edef, 2 ≥ 45MPa, Edef2 / Edef1 ≤** 2.5, however the compaction test measurements performed on 3 individual spots indicated that soil compaction values were unsuitable and have the following identified values

1. Edef, 2 = 27,37MPa; Edef2 / Edef1 = 2,57
2. Edef, 2 = 16,92MPa; Edef2 / Edef1 = 2,48
3. Edef, 2 = 18,32MPa; Edef2 / Edef1 = 2,02

During the 8th progress meeting dated 10 October 2017, the Contractor informed the Engineer / Employer regarding the final results of the Soil Static and Dynamic geotechnical measurements and highlighted that these soil values are classified as unsuitable. The identified bearing capacity of soil has a direct impact on the whole embankment which for this reason has to be redesigned and replaced. The Contractor stated that the unsuitable soil for the compacted embankment is to be removed and replaced by suitable materials brought from off-site in the amounts provided within **Variation Order no.07 "SO311 Ground works"** (Annex 1). The Contractor proposed to dispose the unsuitable soil at the waste depot of **the Nováky Power Plant and Koš** waste depot, both at the distance of 10km from the new substation site. The Contractor proposed to bring the **replacement soil from the Vtáčnik Quarry, 17km from the site.** The replacement of soil was proposed to be carried out in accordance with the valid standards STN 73 3050 and 73 7313 as provided in DDI project documentation (see - drawing BYST=CCA+SO311&CAA_AA01). The solution proposed by the Contractor requires the construction of drainage and collecting pits for dewatering of precipitation and ground water filtering through the built-up embankment, so a formation of water pools at the foot of the embankment is adequately prevented. This is necessary because contrary to the originally envisaged excavated soil which is considered to be impervious, now it is proposed to use gravel, which will allow water to drain through its base.

After reviewing the reasons, the Engineer, by letter dated 19 October 2017, instructed the Contractor to prepare a Proposal for Variation according to GCC Clause 13. The Contractor presented his Proposal for Variation (Variation Order No. 7) on 7 November 2017. Following review and scrutiny of the Proposal by the Engineer and subsequent determinations in accordance with the provisions of PCC 13.3 [Variation Procedure], the Contractor prepared an updated version of the Variation Order no.07 "SO311

Ground works" and submitted to the Engineer on 29 September 2018 (Annex 1) for its final review and approval.

The original price under the Contract for originally envisaged scope for "SO311 Ground works" was €30.613,25 and the revised estimation as per the Contractor's Proposal is €344.733,94 (price breakdown as proposed by the Contractor is included in Annex 1 "Variation order no.07 "SO311 Ground works"), thus increase of cost for the scope is €314,120.69.

In accordance with the provisions of Clause 13.3 [Variation Procedure], the adjustments to a Contract Price shall also include reasonable profit as defined in PCC 1.2, therefore the amount of €15,706.03 representing 5% profit from the cost of the increased scope is calculated.

Eligibility:

Due to the fact that not all information necessary for successful completion and safe operation of the facility was available to the Contractor and considering findings of the Contractor during the Static and Dynamic geotechnical measurements as well as the proposed technical solution the Employer/Engineer found the variation eligible for application under GCC Clause 13 and instructed the Contractor to prepare Variation order.

Conclusion / Recommendation:

The technical documentation of the new solution submitted by the Contractor with the Request for Variation Order no.7 has been checked, approved and found eligible under GCC Clause 13 by the Employer/Engineer.

Following the acceptance of the final technical solution, the Engineer checked the cost proposal submitted by the Contractor. In determining the cost for this Variation, all additions / deductions to the scope were valued at the rates and prices set out in the Contract (Price Schedules) and, where necessary, from other reliable sources (namely, UNIKA 2018 price list).

Calculations for Variation no 7:

The Engineer considers that the price adjustment agreed between the Contractor and Employer is adequate, and, as the proposed additional works are considered necessary for the satisfactory completion of the Project and safe operation of the Facility, the Engineer therefore recommends acceptance of the Request for Variation Order no.7 as eligible, in the amount of **€329,826.72.**

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Bernard Bolton
Project Manager Bratislava

Annexes:

1. Variation order no.07 SO311 Ground works

intec
GOPA International Energy Consultants

Date: 12 August 2019

ENGINEER`S DETERMINATION

Project: Bystričany Substation - Transformation 400/110kV; Horná Ždaňa Substation – Enlargement; Križovany Substation - Enlargement

Engineer's Determination on Contractor's Proposal/Request for the Variation Order no. 9

Subject: SO311 Ground modifications – Removal of Rubble

Individual Project 1: Substation Bystričany – Transformation 400/110kV

Contract Reference: GCC Clause13 [Variations and Adjustments) as amended by PCC Clauses 13.1 and 13.3.

Variation Classification: Inadequate DDT

Reason: Unforeseen ground condition - unexpected discovery of large landfill of building blocks and construction waste during excavation works.

Rationale/Brief Description:

During the 8th progress meeting dated 10 October 2017, the Contractor presented to the Engineer / Employer technical-geodetical measurements proving the existence of construction rubble (a large landfill of building blocks and construction waste) buried on site (see Annex 1 - VO attachment no.7) which was discovered during the realization of the construction of the 400kV gantry. This landfill was not mentioned in DDT (see the picture in the Annex 1) and needed to be removed in its entirety.

Construction waste and rubble are specified as inappropriate material to be used within the scope in accordance with valid standards. The discovery of construction waste / rubble caused an increase in the scope of volume of earthworks: volume to be removed and volume to be replaced with the appropriate material in accordance with the valid standards STN 73 3050 and 73 7313. The Contractor duly gave notice to the Employer and continued executing the Works, using reasonable measures, as appropriate, for the physical condition in accordance with Clause 4.12 [Unforeseeable Physical Conditions].

The Engineer, by letter dated 19 October 2017 instructed the Contractor to prepare a Proposal for Variation according to GCC Clause 13 [Variations and Adjustments]. The Contractor presented the first draft of his proposal (Variation Order No.9), on 7 November 2017. Following review and scrutiny of the Proposal by the Engineer and subsequent determinations in accordance with the provisions of PCC 13.3, the Contractor prepared an updated version of the Variation order no.09 "SO311 Ground Modifications – Removal of Rubble" and submitted to the Engineer on 29 September for its final review and approval.

The price for SO311 "Ground Modification – Removal of Rubble" was not envisaged in the original Contract as the discovered construction waste / rubble was encountered by the Contractor at the Site while executing Works. The **cost of the performed additional work as per the Contractor's Proposal** is **€166.596,11** (price breakdown as proposed by the Contractor is included in Annex 1 Variation Order no.09 **"SO311 Ground Modifications – Removal of Rubble"**).

In accordance with provisions of Clause 13.3 [Variation Procedure], the adjustments to a Contract Price shall also include reasonable profit as defined in PCC 1.2, the amount of **€8,329.81 representing 5%** profit from the cost of the increased scope is calculated.

Eligibility:

Due to the fact that the Contractor encountered unforeseen ground conditions which were not and could not be envisaged in DDT and, accordingly in the original Contract, the Employer/Engineer found the variation eligible for application under GCC Clause 13 and instructed the Contractor to prepare a proposal for Variation.

Conclusion / Recommendation:

The proposed remedy and corresponding technical documentation of the Request for Variation Order no.9 has been checked, approved and found eligible under GCC Clauses 4.12 [Unforeseeable Physical Conditions] and 13 [Variations and Adjustments] by the Employer/Engineer.

Following the acceptance of the remedy, the Engineer checked the cost proposal submitted by the Contractor. In determining the cost of this Variation, all additions to the scope were valued at the rates and prices set out in the Contract (Price Schedules), and, where necessary, from other reliable sources (namely, UNIKA 2018 price list).

The Engineer considers that the price adjustment agreed between the Contractor and Employer is adequate, and, as the additional works due to unforeseen physical conditions are considered necessary for the satisfactory completion of the project, the Engineer therefore recommends acceptance of the Variation Order no.9 as eligible, in the amount of **€174,925.92**.

Bernard Bolton
Project Manager Bratislava

Pictures:

DDT geological survey probes placement and location of rubble piles
Sonda – Probe
Kopa – Rubble pile

Annexes:

1. Variation order no.09 SO311 Ground modifications – removal of rubble

intec
GOPA International Energy Consultants

Date: 12 August 2019

ENGINEER`S DETERMINATION

Project: Bystričany Substation - Transformation 400/110kV; Horná Ždaňa Substation – Enlargement; Križovany Substation - Enlargement

Engineer's Determination on Contractor's Proposal for the Variation Order no. 10
Subject: SO525 Cable Ducts

Individual Project 1: Substation Bystričany – Transformation 400/110kV

Contract Reference: GCC Clause13 [Variations and Adjustments] as amended by PCC Clauses 13.1 and 13.3.

Variation Classification: Additional Scope of Work requested by the Employer subject to GCC Clause 13.1 [Right to Vary]

Reason: The Employers Requirements were amended due to the Incorporation into the Employer's Requirements of a new Internal Standard IS-021: "Requirements for New Cable Ducts dated 22 December 2017".

Rationale/Brief Description:

The Internal Standard IS-021: "Requirements for New Cable Ducts" (attached hereto as Annex 2) is introduced in order to ensure safe and reliable operation of substations through unification of standard at all substations owned by SEPS (the Employer). It defines minimum requirements for new surface cable ducts and describes their construction and technical execution within the following scope: cable ducts, cable conduit (pipeline), cable trays, cable draw pits, fire measures, water sealing and water discharge. The standard requires cable ducts to be accessible from the surface and requires outlets from cable ducts to be executed in the form of cable conduits (pipelines). This standard must be applied:

a) during construction of new substations owned by SEPS (the Employer);
b) during complex reconstructions of substations owned by SEPS (the Employer),
c) during construction or complex reconstructions of cable ducts owned by SEPS (the Employer).

The new Standard IS-021 was not available at the time of preparation of DDT and, accordingly, at the time of concluding the Contract and, therefore, was not included in Employers Requirements. However, after the issue of the new Standard IS-021 in December 2017, it became necessary to ensure that the implementation of new 400kV substation Bystričany follows the new requirements identified there in. The technical solution described in the DDT did not envisage the new requirements of SEPS IS-021: "Requirements for New Cable Ducts" and thus the following modifications were requested:

a) transfer of cable ducts to be designed through shaft´s wall with sewerage PVC pipeline;
b) The angle of cable ducts to be designed with segment pipeline;
c) The length of HDPE pipeline (cable routes out of "life" part of substation) to be changed;
d) The number of cable shafts and elimination of fire covers to be changed;
e) The depth of cable shafts, mass concrete under shafts and concrete class to be changed;
f) The cable end to cable end RSN4 with frame to be changed and modules Roxtec, for earthing to be designed;
g) The reconstruction of existing cable channel to be designed;
h) The transfers for SO 340 and SO 646 to be designed.

At the Employer's request, and based on the requirements for implementation of Internal Standard IS-021 imposing modification to the design and construction of the cable ducts under the Project, the Engineer, by letter dated 15 January 2018 instructed the Contractor to prepare the Variation Proposal according to GCC Clause 13, Variations and Adjustments. The Contractor presented his proposal (Variation Order No. 10), first draft version, on 11 February 2018. Following scrutiny and review of the Proposal by the Engineer and subsequent determinations in accordance with the provisions of PCC 13.3, the Contractor prepared an updated version of Variation Order no.10 "SO525 Cable Ducts" and submitted it to the Engineer on 29 September 2018 (Annex 1) for its final review and approval.

The price under the Contract for the original scope for SO525 Cable ducts was €483.391,92 and the revised estimation as per the Contractor's Proposal is €601.201,48, thus increase of cost for the scope is €117.809,56.

In accordance with the provisions of Clause 13.3 [Variation Procedure], the adjustments to a Contract Price shall also include reasonable profit as defined in PCC 1.2, therefore the amount of €5.890,48 representing 5% profit from the cost of the increased scope is calculated.

Eligibility:

Due to the fact that the Employer introduced the new Standard and thus changed the Employer's Requirements after the Contract was signed, the Employer/Engineer found the variation eligible for application under GCC Clause 13 [Variations and Adjustments], and instructed the Contractor to prepare the Proposal for Variation.

Conclusion / Recommendation:

The technical documentation submitted by the Contractor as part of the Proposal/Request for Variation Order no.10 has been checked, approved and found eligible under GCC Clause 13 by the Employer/Engineer

Following the acceptance of the final technical solution, the Engineer checked the cost proposal submitted by the Contractor. In determining the cost of this Variation, all deductions/additions to the scope were valued at the rates and prices set out in the Contract (Price Schedules), and, where necessary, from other reliable sources (namely, UNIKA 2018 price list).

Calculations for Variation no.10:

The Engineer considers that the price adjustment agreed between the Contractor and Employer is adequate, and, as the additional works are considered necessary for the satisfactory completion of the project, the Engineer therefore recommends acceptance of the Proposal for Variation Order no.10 as eligible, in the amount of **€123.700,04**.

Bernard Bolton
Project Manager Bratislava

Annexes:

1. Variation order no.10 SO525 Cable ducts
2. SEPS Internal Standard IS-021: "Requirements for New Cable Ducts dated 22.12.2017

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GOPA International Energy Consultants

Date: 12 August 2019

ENGINEER`S DETERMINATION

Project: Bystričany Substation - Transformation 400/110kV; Horná Ždaňa Substation – Enlargement; Križovany Substation - Enlargement

Engineer's Determination on Contractor's Proposal for the Variation Order no. 16

Subject: SO 312 Substation Drainage

Individual Project 1: Substation Bystričany – Transformation 400/110kV

Contract Reference: GCC Clause13 [Variations and Adjustments] as amended by PCC Clauses 13.1 and 13.3.

Variation Classification: Additional Scope of Work requested by the Employer subject to GCC Clause 13.1 [Right to Vary]

Reason:

The Employers Requirements were amended due to Incorporation into the Employer's Requirements new Internal Standard IS-021: "Requirements for New Cable Ducts dated 22 December 2017".
Rationale/Brief Description:

The Internal Standard IS-21: Requirement for New Cable Ducts (attached hereto as Annex 2) and effective from 1 January 2018 is introduced in order to ensure safe and reliable operation of substations through unification of standard at all substations owned by SEPS (the Employer). It defines minimum requirements for substation drainage. The standard imposes modification of SO312 Substation Drainage. This standard must be applied:

a) during construction of new substations owned by SEPS (the Employer);
b) during complex reconstructions of substations owned by SEPS (the Employer),
c) during construction or complex reconstructions of cable ducts owned by SEPS (the Employer).

Implementation of internal standard IS-021 requires modification of the design and construction SO525 cable ducts (as presented in Variation order no. 10.) but it also requires modification of SO312 Substation Drainage.

The new Standard IS-021 was not available at the time of preparation of DDT and, accordingly, at the time of concluding the Contract and, therefore, was not included in Employers Requirements. However, after the issue of the new Standard IS-021 in December 2017, it became necessary that the implementation of new 400kV substation Bystričany follows the new requirements identified therein. The technical solution described in the DDT did not envisage the new requirements of SEPS IS-021: "Requirements for New Cable Ducts" and thus the following modifications were requested:

a) The slope layer in shafts to be completed;
b) The drainage pipe to be changed;
c) The excavation volume to be changed; and
d) The draining pipeline to be changed from DN 65 to DN 100 for cable shafts.

At the Employer's request, and based on the requirements for implementation of Internal Standard IS-021 necessitating modification to the design and construction of drainage system under the Project, the

Engineer, by letter dated 25 May 2018 instructed the Contractor to prepare the Variation Proposal according to GCC Clause 13: Variations and Adjustments. The Contractor presented the first draft of his Proposal (Variation Order No.16), on 5 June 2018. Following the review and scrutiny of the Proposal by the Engineer and subsequent determinations in accordance with the provisions of PCC 13.3, the Contractor prepared an updated version of Variation order no.16 "SO312 Substation Drainage" and submitted it to the Engineer on 28 February 2019 (Annex 1) for its final review and approval.

The price under the Contract for the original scope for SO312 Substation drainage was €156.336,05 and the revised estimation as per the updated Variation Order No. 16 is €177.909,19 (price breakdown as proposed by the Contractor is included in Annex 1 – Variation order no.16 SO 312 Substation Drainage, thus increase of cost for the scope is € 21,573.14.

In accordance with provisions of Clause 13.3 [Variation procedure], the adjustments to a Contract Price shall also include reasonable profit as defined in PCC 1.2, therefore the amount of € 1,078.66 representing 5% profit from the increase in the cost of the scope is calculated.

Eligibility:

Due to the fact that the Employer introduced a new Standard and thus changed the Employer's Requirements after the Contract was signed, the Employer/Engineer found the variation eligible for application under GCC Clause 13 [Variations and Adjustments] and instructed the Contractor to prepare a Proposal for Variation.

Conclusion / Recommendation:

The technical documentation of the modification submitted by the Contractor as part of the proposal/Request for Variation Order no.16 has been checked, approved and found eligible under GCC clause 13 by the Employer/Engineer.

Following the acceptance of the final technical solution, the Engineer checked the cost proposal submitted by the Contractor. In determining the cost of this Variation, all deductions/ additions to the scope were valued at the rates and prices set out in the Contract (Price Schedules), and, where necessary, from other reliable sources (namely, UNIKA 2018 price list).

Calculations for Variation no.16:

The Engineer considers that the price adjustment agreed between the Contractor and Employer is adequate, and, as the additional works are considered necessary for the satisfactory completion of the project, the Engineer therefore recommends acceptance of the Proposal for Variation Order no.16 as eligible, in the amount of **€22,651.80**.

Bernard Bolton
Project Manager Bratislava

Annexes:

1. Variation order no.16 SO 312 Substation Drainage
2. SEPS Internal Standard IS-021: "Requirements for New Cable Ducts dated 22.12.2017

Annex 3 to Amendment No. 3

Table of the Approved Variations to the Contract, series II (consisting of Variation Orders 1; 3; 4.1; 7; 9; 10 and 16)

Annex 3 to Amendment No. 3

Project: Substation Bystričany - transformation 400/110 kV / Rozvodňa 400 kV Bystričany
Substation Horná Ždaňa - enlargement / Rozvodňa 400 kV H. Ždaňa - rozšírenie
Substation Križovany - enlargement / Rozvodňa 400 kV Križovany - rozšírenie

Table of the Approved Variations to the Contract, series II/
Tabuľka schválených zmenových návrhov, séria II

No. / č.	Title / Názov	Price / Cena EUR
Variation Order No. 1	SO 311 Earth Works – Trees Felling, Bystričany / SO 311 Zemné úpravy, Bystričany	8 563,31
Variation Order No. 3	PS 07 Substation 400kV – Post insulators, Bystričany / PS 07 Rozvodňa 400 kV, Bystričany	15 499,58
Variation Order No. 4.1	ČPS 30.3 Electric protections, Bystričany / ČPS 30.3 Zmena špecifikácie elektrických ochrán, Bystričany	19 854,45
Variation Order No. 7	SO 311 Ground Works, Bystričany / SO 311 Zemné úpravy, Bystričany	329 826,72
Variation Order No. 9	SO 311 Ground Works - Removal of Rubble, Bystričany / SO 311 Zemné úpravy, Bystričany	174 925,92
Variation Order No. 10	SO 525 Cable Ducts, Bystričany / SO 525 Káblové kanály, Bystričany	123 700,04
Variation Order No. 16	SO 312 Substation Drainage, Bystričany / SO 312 Odvodnenie rozvodne 400 kV, Bystričany	22 651,80
Total – Approved Variations to the Contract, series II / **Spolu** – Schválené Zmenové návrhy, séria II		**695 021,82 €**

Annex 4 to Amendment No. 3

The Approved Variations to the contract, series II (consisting of Variation Orders 1; 3; 4.1; 7; 9; 10 and 16)

Súbor stavieb „Transformácia 400/110kV Bystričany“

Complex ES Bystričany – Transformation 400/110kV

Rozvodňa Bystričany - transformácia 400/110kV

Substation Bystričany - transformation 400/110kV

Zmenové konanie č. 1 – SO 311 Zemné úpravy – výrub stromov

Variation Order no. 1 – SO 311 Earth works – trees felling

Vypracoval / *Created by*	**Ing. Gomba**
Kontroloval / *Checked by*	**Ing. Pasteľák**
Schválil / *Approved by*	**Ing. Szombath**

Zákazka č. / *Contract*	**Označenie** / *Document No.*	**Dátum** / *Date*
222 16 112		**05 / 2017**
Revízia / *Release*	**Status** / *Status*	**Výtl.** / *Copy*
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Content

1. Identification data

Construction:	Substation Bystričany - transformation 400/110kV
Site location:	Electric Station 220/110 kV Bystričany region: Trenčianský kraj district: Prievidza village: Bystričany cadastral area: Bystričany
Employer:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika
Operator:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika

2. Reasons for the Variation

During the realization of the construction "Bystričany Rozvodňa - transformation 400 / 110kV" was raised the request of the client to increase the number of trees intended for cutting down within the scope of the submitted - "Documentation of dendrological survey - Rozvodňa Bystričany".

3. Reasoning

The requirement to increase the number of trees to be excavated has resulted from the need to simplify access to the site. Trees felling in accordance with the approval for felling dated 8.2.2017 issued by the municipality of Bystričany and submitted on the Minutes of Kick-Off Meeting. At the same time, the statement of the DRS project will be completed to the required extent.

4. Variation description

Trees felling was executed in accordance with the approval for felling dated 8.2.2017 issued by the municipality of Bystričany and submitted on the Minutes of Kick-Off Meeting, and also in accordance with design documentation (Attachment No. 2)

5. Financial summary

Detailed budget and bill of quantity (BoQ) is attached to this document.

a) Original budget BoQ from Tender – attachment no.4
b) DDI Budget and BoQ – attachment no.5
c) Comparative Budget and BoQ DDI-TD – attachment no.6

Financial summary for 311 – Earth works:

Variation order budget costs:	38 768,78 EUR
Original budget BoQ from Tender:	30 613,25 EUR
Costs difference	8 155,53 EUR
Reasonable profit according to PCC 1.2 (5% of costs difference):	407,78 EUR
Variation order no.1 – total costs	**8 563,31 EUR**

6. Completion Date Impact

This Variation does not influence overall completion date.

7. Attachments

Attachment no.1 – Preliminary approval by Managing Director of Division of Development and Investment, SEPS a.s.

Attachment no. 2 - Documentation of the dendrological survey Substation Bystričany 10/2016

Attachment no. 3 – Terrain image with marked trees felling area

Attachment no. 4 - Original budget BoQ from Tender

Attachment no. 5 - DDI Budget and BoQ

Attachment no. 6 - Comparative Budget and BoQ DDI-TD

Attachment no.7 – Trees felling approval no. 2813/2017, issued by the municipality of Bystričany on 8.2.2017

Príloha č. 1 / Attachment no.1

Predbežný súhlas Vrchného riaditeľa úseku rozvoja a investícií SEPS, a.s.

Preliminary approval by Managing Director of Division of Development and Investment, SEPS a.s.

Príloha č.2 / *Attachment No.2*

Dokumentácia dendrologického prieskumu Rozvodňa Bystričany 10/2016

Documentation of the dendrological survey Substation Bystričany 10/2016

Slovenská lesnícka spoločnosť, a.s., Dolná 7, 974 01 Banská Bystrica

Dokumentácia dendrologického prieskumu
Rozvodňa Bystričany

Trenčiansky kraj

Okres:Prievidza

Vypracoval: Ing. Milan Danko

Október, 2016

Investor: Slovenská elektrizačná prenosová sústava,a.s. Mlynské Nivy 59/A, 824 84 Bratislava	
Rozvodňa Bystričany	
Objednávateľ: VÚJE, a.s. Okružná 5, 918 64 Trnava IČO: 31450474, IČ DPH: SK2020392539	
Slovenská lesnícka spoločnosť, a.s. Dolná 7 974 01 Banská Bystrica Vypracoval: Ing. Milan Danko	október 2016

Dokumentácia dendrologického prieskumu s výpočtom spoločenskej hodnoty drevín

Táto dokumentácia je spracovaná na základe požiadavky objednávateľa a v zmysle § 17 ods.8, 10, a v zmysle ods.11 Vyhlášky Ministerstva životného prostredia č. 24/2003 Z.z. v znení neskorších predpisov: žiadosť o vydanie súhlasu na výrub dreviny má obsahovať špecifikáciu dreviny ktorá sa má vyrúbať, najmä jej druh, počet, zdravotný stav, obvod kmeňa meraný vo výške 130 cm nad zemou alebo výmeru krovitého porastu.

Táto dokumentácia zároveň navrhuje spoločenskú hodnotu podľa § 36 vyššie uvedenej vyhlášky.

Predpokladaný výrub drevín vo vzťahu k Rozvodni Bystričany bol vykonaný na základe terénneho zisťovania. Dreviny boli označené oranžovou reflexnou farbou, avšak iba na hranici - línii predpokladaného výrubu, nakoľko sa jedná o plochu ohraničenú plotom, vo vnútri Rozvodni Bystričany. Jedná sa o dreviny nachádzajúce sa iba na parcele KN 1146/27.

Tabuľka s prirážkovým indexom, podľa ktorého sa upravuje spoločenská hodnota drevín (príloha vyhlášky č. 24/2003 Z.z. v znení neskorších predpisov).

Špecifikácia drevín rastúcich mimo lesa a vykonané vyčíslenie spoločenskej hodnoty slúži ako podklad pre vydanie súhlasu orgánu ochrany prírody (§ 47 ods. 3a 4 zákona č. 543/2002 Z.z. v znení neskorších predpisov). Je spracovaná **pre kraj Trenčiansky - okres Prievidza** – v k.ú. Bystričany a tvorí samostatnú prílohu.

Celková spoločenská hodnota drevín a krovín rastúcich mimo les, ktorých sa dotýka predmetný predpokladaný zásah v zmysle platných legislatívnych predpisov je **166 092,09 €.**

Ing. Miroslav Uhlík
generálny riaditeľ
Slovenská lesnícka spoločnosť, a.s.
Dolná 7
974 01 Banská Bystrica

V Sliači, 13.10. 2016

SLOVENSKÁ LESNÍCKA SPOLOČNOSŤ a.s.
Dolná 7, 974 01 Banská Bystrica
IČO: 36059105, IČ DPH: SK2022236029

Prílohy: 1x Súpis drevín určených na výrub a ich spoločenská hodnota

Názov dreviny	Obvod kmeňa (cm)	Počet/ výmera (ks/ m^2)	Spoločenská hodnota (€)	Prirážkový Index (poškodenie dreviny)	Prirážkový Index (dlhovekosť dreviny)	Prirážkový Index (pôvod a výskyt dr.)	Upravená spoločenská hodnota (€)	Katastrálne územie	KN podľa stavu"C"
Tilia cordata Mill.	46 - 50	1	507	1	1.1	0.8	446.16	Bystričany	1146/27
Salix caprea L.	41 - 45	3	415	1	0.9	0.8	896.40	Bystričany	1146/27
Salix caprea L.	41 - 45	5	415	0.6	0.9	0.8	896.40	Bystričany	1146/27
Salix caprea L.	46 - 50	1	507	1	0.9	0.8	365.04	Bystričany	1146/27
Salix caprea L.	46 - 50	4	507	0.8	0.9	0.8	1168.13	Bystričany	1146/27
Salix caprea L.	51 - 60	5	599	0.8	0.9	0.8	1725.12	Bystričany	1146/27
Salix caprea L.	61 - 70	1	691	0.8	0.9	0.8	398.02	Bystričany	1146/27
Salix caprea L.	71 - 80	2	783	0.6	0.9	0.8	676.51	Bystričany	1146/27
Pyrus communis L. emen	46 - 50	1	507	0.4	0.9	0.8	146.02	Bystričany	1146/27
Pyrus communis L. emen	51 - 60	1	599	1	0.9	0.8	431.28	Bystričany	1146/27
Pyrus communis L. emen	51 - 60	1	599	0.4	0.9	0.8	172.51	Bystričany	1146/27
Pyrus communis L. emen	61 - 70	2	691	1	0.9	0.8	995.04	Bystričany	1146/27
Pyrus communis L. emen	71 - 80	1	783	1	0.9	0.8	563.76	Bystričany	1146/27
Pyrus communis L. emen	71 - 80	1	783	0.6	0.9	0.8	338.26	Bystričany	1146/27
Pyrus communis L. emen	71 - 80	1	783	0.4	0.9	0.8	225.50	Bystričany	1146/27
Pyrus communis L. emen	81 - 90	2	921	1	0.9	0.8	1326.24	Bystričany	1146/27
Pyrus communis L. emen	101 - 110	1	1198	0.6	0.9	0.8	517.54	Bystričany	1146/27
Pyrus communis L. emen	111 - 120	1	1336	1	0.9	0.8	961.92	Bystričany	1146/27
Pyrus communis L. emen	121 - 130	1	1474	0.6	0.9	0.8	636.77	Bystričany	1146/27
Prunus spinosa L.	41 - 45	1	415	1	0.9	0.8	298.80	Bystričany	1146/27
Prunus spinosa L.	41 - 45	1	415	0.6	0.9	0.8	179.28	Bystričany	1146/27
Prunus spinosa L.	51 - 60	1	599	0.8	0.9	0.8	345.02	Bystričany	1146/27
Prunus spinosa L.	61 - 70	1	691	0.8	0.9	0.8	398.02	Bystričany	1146/27
Prunus cerasifera Ehrh.	41 - 45	1	415	1	0.9	0.8	298.80	Bystričany	1146/27
Prunus cerasifera Ehrh.	41 - 45	1	415	0.6	0.9	0.8	179.28	Bystričany	1146/27
Prunus cerasifera Ehrh.	46 - 50	2	507	1	0.9	0.8	730.08	Bystričany	1146/27
Prunus cerasifera Ehrh.	51 - 60	4	599	1	0.9	0.8	1725.12	Bystričany	1146/27
Prunus cerasifera Ehrh.	71 - 80	3	783	1	0.9	0.8	1691.28	Bystričany	1146/27

Populus tremula L.	46 - 50	1	507	1	0.9	0.8	365.04	Bystričany	1146/27
Populus tremula L.	46 - 50	1	507	0.8	0.9	0.8	292.03	Bystričany	1146/27
Populus tremula L.	51 - 60	2	599	1	0.9	0.8	862.56	Bystričany	1146/27
Populus tremula L.	61 - 70	1	691	0.8	0.9	0.8	398.02	Bystričany	1146/27
Populus tremula L.	191 - 220	1	2073	1	0.9	0.8	1492.56	Bystričany	1146/27
Pinus sylvestris L.	121 - 130	1	1796	1	1	0.8	1436.80	Bystričany	1146/27
Picea pungens Engelm.	61 - 70	1	967	0.2	1	0.6	116.04	Bystričany	1146/27
Malus floribunda Siebold Mill.	41 - 45	7	415	1	0.9	0.8	2091.60	Bystričany	1146/27
Malus floribunda Siebold Mill.	41 - 45	5	415	0.8	0.9	0.8	1195.20	Bystričany	1146/27
Malus floribunda Siebold Mill.	41 - 45	5	415	0.6	0.9	0.8	896.40	Bystričany	1146/27
Malus floribunda Siebold Mill.	41 - 45	4	415	0.4	0.9	0.8	478.08	Bystričany	1146/27
Malus floribunda Siebold Mill.	46 - 50	6	507	1	0.9	0.8	2190.24	Bystričany	1146/27
Malus floribunda Siebold Mill.	46 - 50	3	507	0.8	0.9	0.8	876.10	Bystričany	1146/27
Malus floribunda Siebold Mill.	46 - 50	4	507	0.6	0.9	0.8	876.10	Bystričany	1146/27
Malus floribunda Siebold Mill.	46 - 50	4	507	0.4	0.9	0.8	584.06	Bystričany	1146/27
Malus floribunda Siebold Mill.	51 - 60	13	599	1	0.9	0.8	5606.64	Bystričany	1146/27
Malus floribunda Siebold Mill.	51 - 60	5	599	0.8	0.9	0.8	1725.12	Bystričany	1146/27
Malus floribunda Siebold Mill.	51 - 60	4	599	0.6	0.9	0.8	1035.07	Bystričany	1146/27
Malus floribunda Siebold Mill.	51 - 60	5	599	0.4	0.9	0.8	862.56	Bystričany	1146/27
Malus floribunda Siebold Mill.	51 - 60	1	599	0.2	0.9	0.8	86.26	Bystričany	1146/27
Malus floribunda Siebold Mill.	61 - 70	14	691	1	0.9	0.8	6965.28	Bystričany	1146/27
Malus floribunda Siebold Mill.	61 - 70	4	691	0.8	0.9	0.8	1592.06	Bystričany	1146/27
Malus floribunda Siebold Mill.	61 - 70	6	691	0.6	0.9	0.8	1791.07	Bystričany	1146/27
Malus floribunda Siebold Mill.	61 - 70	3	691	0.4	0.9	0.8	597.02	Bystričany	1146/27
Malus floribunda Siebold Mill.	61 - 70	2	691	0.2	0.9	0.8	199.01	Bystričany	1146/27
Malus floribunda Siebold Mill.	71 - 80	7	783	1	0.9	0.8	3946.32	Bystričany	1146/27
Malus floribunda Siebold Mill.	71 - 80	4	783	0.8	0.9	0.8	1804.03	Bystričany	1146/27
Malus floribunda Siebold Mill.	71 - 80	4	783	0.6	0.9	0.8	1353.02	Bystričany	1146/27
Malus floribunda Siebold Mill.	71 - 80	4	783	0.4	0.9	0.8	902.02	Bystričany	1146/27
Malus floribunda Siebold Mill.	81 - 90	8	921	1	0.9	0.8	5304.96	Bystričany	1146/27
Malus floribunda Siebold Mill.	81 - 90	3	921	0.8	0.9	0.8	1591.49	Bystričany	1146/27
Malus floribunda Siebold Mill.	81 - 90	4	921	0.6	0.9	0.8	1591.49	Bystričany	1146/27

Malus floribunda Siebold Mill.	81 - 90	4	921	0.4	0.9	0.8	1060.99	Bystričany	1146/27
Malus floribunda Siebold Mill.	91 - 100	5	1059	1	0.9	0.8	3812.40	Bystričany	1146/27
Malus floribunda Siebold Mill.	91 - 100	3	1059	0.8	0.9	0.8	1829.95	Bystričany	1146/27
Malus floribunda Siebold Mill.	91 - 100	2	1059	0.6	0.9	0.8	914.98	Bystričany	1146/27
Malus floribunda Siebold Mill.	91 - 100	2	1059	0.4	0.9	0.8	609.98	Bystričany	1146/27
Malus floribunda Siebold Mill.	101 - 110	5	1198	1	0.9	0.8	4312.80	Bystričany	1146/27
Malus floribunda Siebold Mill.	101 - 110	3	1198	0.6	0.9	0.8	1552.61	Bystričany	1146/27
Malus floribunda Siebold Mill.	111 - 120	1	1336	1	0.9	0.8	961.92	Bystričany	1146/27
Malus floribunda Siebold Mill.	111 - 120	1	1336	0.8	0.9	0.8	769.54	Bystričany	1146/27
Malus floribunda Siebold Mill.	111 - 120	1	1336	0.4	0.9	0.8	384.77	Bystričany	1146/27
Malus floribunda Siebold Mill.	131 - 160	1	1612	0.8	0.9	0.8	928.51	Bystričany	1146/27
Malus floribunda Siebold Mill.	131 - 160	1	1612	0.6	0.9	0.8	696.38	Bystričany	1146/27
Malus floribunda Siebold Mill.	131 - 160	1	1612	0.4	0.9	0.8	464.26	Bystričany	1146/27
Juglans regia L.	41 - 45	1	415	1	1	0.8	332.00	Bystričany	1146/27
Juglans regia L.	51 - 60	1	599	1	1	0.8	479.20	Bystričany	1146/27
Juglans regia L.	91 - 100	2	1059	1	1	0.8	1694.40	Bystričany	1146/27
Juglans regia L.	111 - 120	1	1336	1	1	0.8	1068.80	Bystričany	1146/27
Crataegus laevigata (Poir.) Dcrataegus	41 - 45	2	415	0.8	0.9	0.8	478.08	Bystričany	1146/27
Crataegus laevigata (Poir.) Dcrataegus	61 - 70	1	691	1	0.9	0.8	497.52	Bystričany	1146/27
Cerasus avium (L.) Moench	41 - 45	30	415	1	0.9	0.8	8964.00	Bystričany	1146/27
Cerasus avium (L.) Moench	41 - 45	11	415	0.8	0.9	0.8	2629.44	Bystričany	1146/27
Cerasus avium (L.) Moench	41 - 45	3	415	0.6	0.9	0.8	537.84	Bystričany	1146/27
Cerasus avium (L.) Moench	46 - 50	15	507	1	0.9	0.8	5475.60	Bystričany	1146/27
Cerasus avium (L.) Moench	46 - 50	6	507	0.8	0.9	0.8	1752.19	Bystričany	1146/27
Cerasus avium (L.) Moench	46 - 50	1	507	0.6	0.9	0.8	219.02	Bystričany	1146/27
Cerasus avium (L.) Moench	51 - 60	15	599	1	0.9	0.8	6469.20	Bystričany	1146/27
Cerasus avium (L.) Moench	51 - 60	8	599	0.8	0.9	0.8	2760.19	Bystričany	1146/27
Cerasus avium (L.) Moench	51 - 60	2	599	0.6	0.9	0.8	517.54	Bystričany	1146/27
Cerasus avium (L.) Moench	61 - 70	11	691	1	0.9	0.8	5472.72	Bystričany	1146/27
Cerasus avium (L.) Moench	61 - 70	5	691	0.8	0.9	0.8	1990.08	Bystričany	1146/27

Cerasus avium (L.) Moench	71 - 80	6	783	1	0.9	0.8	3382.56	Bystričany	1146/27
Cerasus avium (L.) Moench	71 - 80	6	783	0.8	0.9	0.8	2706.05	Bystričany	1146/27
Cerasus avium (L.) Moench	71 - 80	1	783	0.6	0.9	0.8	338.26	Bystričany	1146/27
Cerasus avium (L.) Moench	81 - 90	1	921	1	0.9	0.8	663.12	Bystričany	1146/27
Cerasus avium (L.) Moench	81 - 90	3	921	0.8	0.9	0.8	1591.49	Bystričany	1146/27
Cerasus avium (L.) Moench	81 - 90	1	921	0.4	0.9	0.8	265.25	Bystričany	1146/27
Cerasus avium (L.) Moench	91 - 100	4	1059	1	0.9	0.8	3049.92	Bystričany	1146/27
Cerasus avium (L.) Moench	91 - 100	1	1059	0.6	0.9	0.8	457.49	Bystričany	1146/27
Cerasus avium (L.) Moench	101 - 110	3	1198	1	0.9	0.8	2587.68	Bystričany	1146/27
Cerasus avium (L.) Moench	101 - 110	2	1198	0.8	0.9	0.8	1380.10	Bystričany	1146/27
Cerasus avium (L.) Moench	111 - 120	3	1336	0.8	0.9	0.8	2308.61	Bystričany	1146/27
Cerasus avium (L.) Moench	111 - 120	1	1336	0.6	0.9	0.8	577.15	Bystričany	1146/27
Cerasus avium (L.) Moench	131 - 160	1	1612	1	0.9	0.8	1160.64	Bystričany	1146/27
Cerasus avium (L.) Moench	131 - 160	3	1612	0.8	0.9	0.8	2785.54	Bystričany	1146/27
Acer campestre L.	41 - 45	1	415	1	1	0.8	332.00	Bystričany	1146/27
Acer campestre L.	101 - 110	1	1198	1	1	0.8	958.40	Bystričany	1146/27
Crataegus laevigata (Poir.) Dcrataegus	kroviny	50	9	1	0.9	0.8	324.00	Bystričany	1146/27
Euonymus europaeus L.	kroviny	30	9	1	0.9	0.8	194.40	Bystričany	1146/27
Ligustrum vulgare L.	kroviny	40	7	1	0.9	0.8	201.60	Bystričany	1146/27
Prunus spinosa L.	kroviny	230	18	1	0.9	0.8	2980.80	Bystričany	1146/27
Rosa canina L.	kroviny	120	12	1	0.9	0.8	1036.80	Bystričany	1146/27
Rosa canina L.	kroviny	50	7	1	0.9	0.8	252.00	Bystričany	1146/27
Rubus fruticosus L. agg.	kroviny	50	7	1	0.9	0.8	252.00	Bystričany	1146/27
Sambucus nigra L.	kroviny	20	12	1	0.9	0.8	172.80	Bystričany	1146/27
Swida sanguinea (L.) Opiz	kroviny	450	12	1	0.9	0.8	3888.00	Bystričany	1146/27
Swida sanguinea (L.) Opiz	kroviny	550	7	1	0.9	0.8	2772.00	Bystričany	1146/27

166092.09

Príloha č.3 / *Attachment No.3*

Snímka územia s vyznačeným predmetom výrubu

Terrain image with marked object of the excavation

Príloha č.4 / *Attachment No.4*

Rozpočtové náklady – DVZ

Original budget BoQ from Tender

Príloha č.5 / *Attachment No.5*

Rozpočtové náklady – DRS

DDI Budget and BoQ

Príloha č.6 / *Attachment No.6*

Rozpočtové náklady – DVZ – DRS

Comparative Budget and BoQ DDI-TD

Príloha č.7 / *Attachment No.7*

Povolenie na výrub č.2813/2017,vydala Obec Bystričany zo dňa 8.2.2017

Authorization for cutting no. 2813/2017, issued by the municipality of Bystričany on 8.2.2017

OBEC BYSTRIČANY

OBECNÝ ÚRAD
Mirka Nešpora č. 1/17, 972 45 Bystričany

VUJE, a.s.
Sl... 9... 1 TRNAVA
DOŠLO - 8. 02. 2017
ČÍSLO 2813/2017
PRIDELENIE
ČÍSLO SPISU 3

Slovenská elektrizačná
prenosová sústava, a.s.
Mlynské Nivy 59/A
824 84 Bratislava
v zastúpení Ing. Anton Kurinec
VUJE, a.s.
Okružná 5
918 64 Trnava

Vaša značka	Naša značka	Vybavuje	Dátum
20471/2016	427/2016/3/2017	S. Dudášová	31.1. 2017

Vec
ROZHODNUTIE

Starosta obce Bystričany Vojtech Bartoš, ako príslušný orgán štátnej správy ochrany prírody a krajiny podľa § 2 písm. f) zákona č. 416/2001 Z.z. o prechode niektorých pôsobností z orgánov štátnej správy na obce a na vyššie územné celky, § 69 ods. 1 pís. a) zákona č. 543/2002 Z.z. o ochrane prírody a krajiny v znení neskorších predpisov (ďalej len zákon o ochrane prírody) v znení § 1 ods.2 zákona č. 525/2003 Z.z. o štátnej správe starostlivosti o životné prostredie a o zmene a doplnení niektorých zákonov, na základe žiadosti Slovenskej elektrizačnej prenosovej sústavy, a.s. Mlynské nivy 59/A, 824 84 Bratislava v zastúpení spoločnosťou VUJE, a.s., Okružná5, 918 64 Trnava, zo dňa 28.11.2016 **vydáva** v zmysle § 47 ods. 3 zákona a § 17 vyhlášky č. 24/2003 Z.z., ktorou sa vykonáva zákon č. 543/2002 Z.z. v súlade s § 82 zákona o ochrane prírody a v súlade s ustanoveniami zákona č. 71/1967 Zb. o správnom konaní v znení neskorších zákonov

spoločnosti Slovenská elektrizačná prenosová sústava, a.s.
Mlynské nivy 59/A, 824 84 Bratislava
v zastúpení spoločnosťou VUJE, a.s., Okružná5, 918 64 Trnava

s ú h l a s n a v ý r u b
nasledovných drevín a krovitých porastov

rastúcich v areáli Rozvodne 400 kV v Bystričanoch na pozemku parcela CKN č. 1146/27. druh pozemku zastavaná plocha a nádvorie a parcela CKN č. 1147/4 druh pozemku ostatná plocha v katastrálnom území Bystričany, obe vo vlastníctve Slovenskej elektrizačnej prenosovej sústavy a.s. Bratislava

- Tilia cordata Mill. V počte 1 kus s obvodom kmeňa 50 cm
- Salix caprea L. v počte 21 kusov s obvodom kmeňa 41 - 80 cm

- Pyrus communis L. emen v počte 13 kusov s obvodom kmeňa 46 - 130 cm
- Prunus spinosa L. v počte 4 kusy s obvodom kmeňa 41 - 70 cm
- Prunus cerasifera Ehrh. v počte 11 ks s obvodom kmeňa 41 – 80 cm
- Populus tremula L.v počte 7 kusov s obvodom kmeňa 46 - 220 cm
- Pinus sylvestris L. v počte 1 kus s obvodom kmeňa 130 cm
- Picea pungens Engelm. v počte 1 kus s obvodom kmeňa 70 cm,
- Malus floribunda Siebold Mill. v počte 159 kusov s obvodom 41 - 160 cm
- Juglans regia L. v počte 5 ks s obvodom kmeňa 41 – 10 cm
- Crataegus laevigata (Poir.) v počte 3 kusy s obvodom kmeňa 41 – 70 cm
- Cerasus avium (L.) Moench v počte 143 kusov s obvodom kmeňa 41 – 160 cm
- Acer campestre L. v počte 2 kusy s obvodom kmeňa 41 – 110 cm
- krovité porasty : Crataegus laevigata (Poir.) Dcrataegus o výmere 50 m²
- Euonymus europaeus L. o výmere 30 m²
- Ligustrum vulgare L. o výmere 40 m²
- Prunus spinosa L.o výmere 230 m²
- Rosa canina L. o výmere 170 m²
- Rubus fruticosus L. agg. o výmere 50 m²
- Sambucus nigra L. o výmere 20 m²
- Swida sanguinea (L.) Opiz o výmere 1000 m²

I. V súlade s § 82 ods. 12 zákona o ochrane prírody **určujeme nasledovné podmienky** vykonania výrubu zabezpečujúce ochranu prírody a krajiny:

1. **výrub** drevín sa uskutoční v období vegetačného pokoja vždy od 1.októbra do 31.marca v roku 2017 a v roku 2018
2. po ukončení prác zabezpečiť odstránenie drevnej hmoty, priestranstvo upratať.

II. V súlade s § 69 ods.1 pís. f) v zmysle § 48 ods.1 zákona o ochrane prírody **Obec Bystričany** ukladá **finančnú náhradu v zmysle §** 95 v sume 166.092, 09 eur, ktorú žiadateľ uhradí najneskôr do 60 dní po oznámení termínu začatia prác. Začatie prác oznámiť našej obci minimálne 7 dni pred samotným začatím. Číslo účtu vo VÚB, na ktoré bude finančná náhrada uhradená je SK 5602000000000018023382, VS: 3/2017, KS : 0308.

Z dôvodov uvedených v § 89 zákona o ochrane prírody môže starosta obce Bystričany na návrh alebo z vlastného podnetu tento súhlas zmeniť alebo zrušiť. Osobitné predpisy , ako aj ostatné ustanovenia zákona zostávajú vydaním tohto súhlasu nedotknuté.

Odôvodnenie :

Spoločnosť Slovenská elektrizačná prenosová sústava, a.s. Mlynské nivy 59/A, 824 84 Bratislava v zastúpení spoločnosťou VUJE a.s., Trnava, Okružná 5 (ďalej len žiadateľ) požiadala listom zo dňa 28.11.2016 o výrub drevín, z dôvodu uskutočnenia stavby **„Rozvodňa 400 kV – Bystričany"** a stavby **„Diaľkové riadenie elektrickej stanice Bystričany objekt SO 690 Príjazdová komunikácia"**. Pre uvedené stavby bolo vydané stavebné povolenie obcou Bystričany dňa 15.12.2015 č. 360/2015/479/SOÚ, ktoré nadobudlo právoplatnosť dňa 20.1.2016 a stavebné povolenie zabezpečené vydaním rozhodnutia o zmene stavby pred dokončením dňa 22.7.2016 č. 291/2016/285/SOÚ, ktoré nadobudlo právoplatnosť dňa 27.8.2016. Výrub je povolený aj na časti pozemku, ktorý bude tvoriť zariadenie staveniska.

Starosta obce Bystričany začal dňa 28.11.2016 správne konanie, zvolal na deň 15.12.2016 ústne rokovanie, na ktorom sa zúčastnil zástupca žiadateľa. Ku žiadosti bola okrem povinných príloh doložená dokumentácia dendrologického prieskumu „ Rozvodňa Bystričany" . Zároveň sa uskutočnila miestna obhliadka, na ktorej bolo zistené, že predmetné dreviny prekážajú uvedenej stavbe a zariadeniu staveniska. Dreviny určené na výrub boli označené jednotlivo farebným znakom kruhového tvaru s priemerom 5 cm na kmeni vo výške 130 cm nad zemou a na koreňovom nábehu.

Názvy predmetných drevín sú uvedené vyššie v tomto rozhodnutí. Vzhľadom na uvedené skutočnosti nie je účelné ďalej tieto dreviny zachovávať a z toho dôvodu bolo rozhodnuté tak, ako je uvedené vo výrokovej časti tohto rozhodnutia.

Správny poplatok bol uhradený do pokladne obce v zmysle prílohy zákona č.145/1995 Z.z. o správnych poplatkoch v znení neskorších predpisov vo výške 100,- eur. Uložená finančná náhrada bude realizovaná podľa bodu II. výrokovej časti tohto rozhodnutia.

Poučenie :

Proti tomuto rozhodnutiu možno podať odvolanie podľa § 53 zákona č.71/1967 Zb. o správnom konaní v znení neskorších zákonov do 15 dní od jeho doručenia na Okresný úrad odbor starostlivosti o životné prostredie v Prievidzi prostredníctvom tunajšieho obecného úradu.

Toto rozhodnutie je preskúmateľné súdom po vyčerpaní všetkých prípustných riadnych opravných prostriedkov.

Vojtech Bartoš
starosta obce

Rozhodnutie sa doručuje :

1. Slovenská elektrizačná prenosová sústava, a.s.Mlynské nivy 59/A, 824 84 Bratislava
2. Ing. Anton Kurinec, VUJE, a.s., Okružná5, 918 64 Trnava
3. do spisu obce

Na vedomie: 1. SIŽP-inšpektorát ochrany prírody a krajiny Banská Bystrica
Jegorovova 29B, 974 01 Banská Bystrica
(po právoplatnosti rozhodnutia)

Tel. 046/5493 120
IČO 00318019
DIČ 2021211632
E-mail obec.bystricany@stonline.sk
web www.bystricany.sk

OBEC BYSTRIČANY

OBECNÝ ÚRAD
Mirka Nešpora č. 1/17, 972 45 Bystričany

VUJE, a.s.
Okružná 5
918 64 TRNAVA

Vaša značka	Naša značka	Vybavuje	Dátum
20471/2016	427/ 2016	S. Dudášová	30.12.2016

Vec
Predĺženie lehoty pre vydanie rozhodnutia

Obec Bystričany zastúpená starostom obce Vojtechom Bartošom v zmysle §49 ods.2 zákona č. 71/1967 Zb. o správnom konaní (správny poriadok) **predlžuje lehotu** pre vydanie rozhodnutia vo veci výrubu drevín žiadateľa Slovenská elektrizačná prenosová sústava a.s., Mlynské nivy 59/A , 824 84 Bratislava v zastúpení VUJE, a.s. Trnava, nakoľko podklady potrebné pre posúdenie zisteného skutočného stavu veci predložené žiadateľom, svojim rozsahom vyžadujú hlbšie posúdenie veci.

Vojtech Bartoš
starosta obce

Doručuje sa :

1. Slovenská elektrizačná prenosová sústava, a.s.Mlynské nivy 59/A, 824 84 Bratislava
2. Ing. Anton Kurinec, VUJE, a.s., Okružná5, 918 64 Trnava
3. do spisu obce

OBEC BYSTRIČANY

Č. j. 427/2016 V Bystričanoch dňa 15.12.2016

Zápisnica spísaná v zmysle § 22 ods. 1 zákona č.71/1967 Zb. o správnom konaní v znení neskorších predpisov dňa 15.12.2016 na Obecnom úrade v Bystričanoch o priebehu ústneho rokovania spojeného s miestnou obhliadkou v zmysle § 21 ods. 1 zákona č.71/1967 zb. o správnom konaní v znení neskorších zákonov vo veci žiadosti o súhlas na výrub drevín, ktoré rastú v areáli Rozvodne Bystričany na parcele č. 1146/27 druh pozemku zastavaná plocha a nádvorie a na parcele č. 1147/4 druh pozemku ostatná plocha v katastrálnom území Bystričany vo vlastníctve žiadateľa v zmysle § 47 ods. 3 zákona č.543/2002 Z.z. o ochrane prírody a krajiny v znení neskorších predpisov a § 17 vyhlášky č. 24/2003 Z.z., ktorou sa vykonáva zákon č. 543/2002 Z.z. o ochrane prírody a krajiny, o ktoré požiadala Slovenská elektrizačná prenosová sústava a.s. Mlynské nivy 59/A, Bratislava v zastúpení spoločnosťou VUJE, a.s. Trnava (žiadateľ).

Prítomní
za obec Bystričany : starosta obce Vojtech Bartoš, pracovníčka obce Soňa Dudášová
za žiadateľa : Ing. Martin Marko

Priebeh rokovania : Ústne rokovanie dňa 15.12.2016 o 9,00 hod. začala obec Bystričany v zast. starostom obce Vojtechom Bartošom. Prítomní boli oboznámení s predmetom rokovania, mali možnosť k nemu vzniesť otázky, námietky a pripomienky. Žiadosť podal žiadateľ z dôvodu plánovanej realizácie stavby Rozvodňa 400 kV, na ktorú bolo vydané stavebné povolenie v decembri 2015 a realizácie zmeny stavby pred dokončením pre stavbu Diaľkové riadenie elektrickej stanice Bystričany objekt Príjazdová komunikácia zo dňa 22. 7. 2016. Súčasťou ústneho rokovania bola aj obhliadka predmetných drevín, o výrub ktorých žiadateľ požiadal. Dreviny určené na výrub boli označené jednotlivo farebným znakom kruhového tvaru s priemerom 5 cm na kmeni vo výške 130 cm nad zemou a na koreňovom nábehu.

Vyjadrenie účastníkov konania :
Žiadateľ trvá na udelení súhlasu k výrubu v zmysle podanej žiadosti zo dňa 28.11. 2016. Žiadateľ berie na vedomie, že v prípade vydania súhlasu na výrub stromov mu orgán ochrany prírody a krajiny uloží úhradu za spoločenskú hodnotu drevín v zmysle zákona č. 543/2002 Z. z. o ochrane prírody a krajiny, na základe predloženej Dokumentácie dendrologického prieskumu s výpočtom spoločenskej hodnoty drevín vypracovaného Slovenskou lesníckou spoločnosťou a.s. Dolná 7, 974 01 Banská Bystrica v októbri 2016 Ing. Milanom Markom

Obec konštatuje :
Obec Bystričany konštatuje, že požiadavka na výrub uvedených drevín je opodstatnená. Do situačného výkresu bolo žiadateľom vyznačené konkrétne územie výstavby a zvlášť územie na zriadenie staveniska stavby Rozvodne 400 kV Bystričany. Po hlbšom preskúmaní dokumentácie dendrologického prieskumu bude vydané stanovisko obce k výrubu.

Zápisnica bola skončená všetkými účastníkmi prečítaná.

Zapísala S. Dudášová

Súbor stavieb „Transformácia 400/110kV Bystričany“

Complex ES Bystričany – Transformation 400/110kV

Rozvodňa Bystričany - transformácia 400/110kV

Substation Bystričany - transformation 400/110kV

Zmenové konanie č. 3 – PS07 rozvodňa 400kV

Variation Order no. 3 – PS 07 Distribution 400kV

Vypracoval / *Created by*	**Ing. Holod**
Kontroloval / *Checked by*	**Ing. Pasteľák**
Schválil / *Approved by*	**Ing. Szombath**

Zákazka č. / *Contract*	**Označenie** / *Document No.*	**Dátum** / *Date*
222 16 112		**12 / 2017**
Revízia / *Release*	**Status** / *Status*	**Výtl.** / *Copy*
01		

Content

1. Identification data

Construction:	Substation Bystričany - transformation 400/110kV
Site location:	Electric Station 220/110 kV Bystričany region: Trenčianský kraj district: Prievidza village: Bystričany cadastral area: Bystričany
Employer:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika
Operator:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika

2. Reasons for the Variation

During design works performance of „Substation Bystričany – transformation 400/110kV" , of electrical part PS07 – 400kV Switchyard, additional circumstances were found that caused variation of technical solution of design documentation for implementation (DDI). This variation includes reassessment and replacement of original proposed post insulators. Design documents for Tendering does not show details on post insulator connection points, these shall be defined by DDI after this definition and reassessment of load on post insulators, these shall be replaced by stronger units.

3. Reasoning

The Tubular connections reassessment calculation was performed according to the standard STN EN 60865-1. Strength in support points no. 1-12 significantly exceed the 4kN load limit that was considered in the DDT.

This calculation was realised with support points 1-12 according to figures No.1, 2:

Resulting strength load of support point no. 1, 2, 3

Partial calculation for 2 single parts of the connection was made. Results were superimposed (vector-added) with short-circuit force on conductor in a perpendicular arrangement.

Designed 160 x 6 mm tube conductors meet the standard requirements, but the C4 support insulators are not suitable.

Maximum Forces on conductor:

- post insulator for tubular conductor in perpendicular arrangement (A1+A2): 7,40 kN

(i.e. category C8 – suits the standard requirements)

- instrument transformer (B1): 2,51 kN
- central post insulator for span of 2x14 m (B2): 7,43 kN

(i.e. category C8 – suits the standard requirements)

Resulting strength load of support point no. 12

Minimum guaranteed strength of support point A (safety factor 1.25)	**$F_{dA(min)}$**	**6,825**	**4,998**	**kN**

According to complete calculation respecting standard STN EN 60865-1 to be found in Attachment No. 3a, the force load on post insulators no. 1-12 (see FIG. 1, 2) in bays ACA08-ACA09 and post insulators no.1-10 (see FIG no.3,4), significantly exceeds the 4 kN limit load considered for C4 type as required by the DDT. Therefore, we suggest using C8 type post insulator with a strength of 8kN, i.e. 19pcs in ACA08-ACA09 bay and 20pcs in ACA02-ACA03 bays.

4. Variation description

The Variation includes:

a) Replacement of the 19 pcs C4 type post insulators for 19pcs C8 type post insulators for bay ACA 08-09 (Figures 1, 2)

b) Replacement of the 19 pcs C4 type post insulators for 19pcs C8 type post insulators for bays ACA02-03 (Figures 3, 4)

5. Financial summary

Detailed budget and bill of quantity (BoQ) is attached to this document.

a) Original budget BoQ from Tender – attachment no.4

b) DDI Budget and BoQ – attachment no.5

c) Comparative Budget and BoQ DDI-TD – attachment no.6

Financial summary for PS 07 – Distribution 400 kV:

Variation order budget costs:	46 741,50 EUR
Original budget BoQ from Tender:	- 31 980,00 EUR
Costs difference:	14 761,50 EUR
Reasonable profit according to PCC 1.2 (5% of costs difference):	733,08 EUR
Variation order no. 3 – total costs	**15 499,58 EUR**

6. Completion Date Impact

This Variation does not influence overall completion date.

7. Attachments

Attachment no.1 – Preliminary approval by Managing Director of Division of Development and Investment, SEPS a.s

Attachment no.2 – Construction General designer statement

Attachment no.3 – Calculations of tube connections

Attachment no.4 – Original budget BoQ from Tender

Attachment no.5 – DDI Budget and BoQ

Attachment no.6 – Comparative Budget and BoQ DDI-TD

Attachment no.7 – Design Documentation for Implementation (DDI) – PS 07 Distribution 400kV

Príloha č.1 / *Attachment No.1*

Predbežný súhlas Vrchného riaditeľa úseku rozvoja a investícií SEPS, a.s.

Preliminary approval by Managing Director of Division of Development and Investment, SEPS

Vec : Vydanie predbežného súhlasu na zmenu podperných izolátorov

Vážený pán vrchný riaditeľ,

dovoľujeme si Vás požiadať o vydanie predbežného súhlasu na zmenu typu podperných izolátorov v ESt Bystričany, ako súčasť stavby „Rozvodňa Bystričany - transformácia 400/110 kV". Zmena typu podperných izolátorov z pôvodných 39 kusov typu C4 (4kN) za vyhovujúci typ C8 (8kN). Nová realizačná dokumentácia pre podperné izolátory bola prerokovaná a odsúhlasená s Oddelením obchodného merania (SEPS) a s generálnym projektantom Energoprojekt, s.r.o. Zhotoviteľ vypracoval nový rozpočet a vyčíslil jednotlivé položky naviac prác, viď Prílohu 02 Výkaz výmer. Celková cena diela je vyššia o 14 761,50 € bez DPH. Touto zmenou nevzniká žiadny dopad na termín uvedenia do prevádzky.
Týmto Vás v zmysle SM 09/2009 Prílohy D časť B, bod 3 žiadame vydať predbežný súhlas so zmenovým konaním – viď Prílohu č. 8.

Za kladné vybavenie tejto žiadosti Vám vopred ďakujeme.

S pozdravom,

RNDr. Juraj Bosek
vedúci samostatného odboru investícií

Prílohy: 1, Žiadosť zhotoviteľa na realizáciu zmeny,
2, Ocenené položky naviac prác výkazu výmer,
3, Súhlas generálneho projektanta,
4, Odôvodnenie oddelenia obchodného merania,
5, Ocenené položky naviac prác výkazu výmer,
6, Projekt posúdenia izolátorov,
7, Fakturačné meranie,
8, Návrh textu predbežného súhlasu so zmenovým konaním.

Vydanie predbežného súhlasu na zmenu podperných izolátorov v Rozvodni Bystričany

Na základe predloženej realizačnej dokumentácie a potrebných súhlasov a vyjadrení o jej prerokovaní vydávam v zmysle SM 09/2009 Prílohy D časť B, bod 3

predbežný súhlas

na zrealizovanie zmeny typu podperných izolátorov na základe podrobných technických výpočtov **s celkovým navýšením ceny stavby o 14 761,50 €** bez DPH.

Súčasne ukladám v zmysle ZoD 2016-0295-1177501, podpísanej dňa 6. február 2017, vypracovať Dodatok č.1 k tejto ZoD pre zmenu realizácie podperných izolátorov.

V Bratislave dňa 9.8.2017

Ing. Miroslav Stejskal
vrchný riaditeľ úseku rozvoja a investícií

Príloha č.2 / *Attachment No.2*

Stanovisko Generálneho projektanta

Construction General designer statement.

VUJE, a.s.
Okružná 5 • 918 64 Trnava • Slovenská republika

vúje

Ing. Tomáš Bálint
SPIE Elektrovod, a.s.
Prievozská 4C
824 66 Bratislava 26

VÁŠ LIST ČÍSLO / ZO DŇA	NAŠE ČÍSLO	KÓD CITLIVOSTI[1]	VYBAVUJE / LINKA	DÁTUM
Mail/16.4.2018	9852/2018	3	Dekýš/3308	22.05.2018

VEC

Vyjadrenie generálneho projektanta k zmenovému konaniu č.3 pre stavbu „Rozvodňa Bystričany - transformácia 400/110kV

Po prekontrolovaní predložených výpočtov od autora DRS môžeme skonštatovať , že hodnoty ku ktorým dospel sú správne. Pri tvorbe dokumentácie v stupni DSP a DVZ sú všetky výpočty realizované na všeobecné predpokladané parametre prvkov - keďže konkrétny výrobok je známy až po vysúťažení a tým pádom je potrebné autorom DRS všetky zaťaženia verifikovať a v prípade potreby, tak ako teraz, vykonať príslušné opatrenia ak si to situácia vyžaduje. Rovnako je konečný výsledok závislý aj od konkrétneho rozloženia pevných a kĺzných svoriek rúrových vodičov, ktoré je riešené opäť až v stupni RPD.

Preto z nášho pohľadu schvaľujeme zmenu podperných izolátorov rady C4 na podperné izolátory rady C8, na všetkých miestach kde výpočet dokázal prekročenie maximálneho dovoleného namáhania podperného izolátora C4 oproti predpokladom zo stupňa DSP.

Ing. Michal Dekýš
Vedúci oddelenia 1240

TEL: 0905587318 / **EMAIL:** michal.dekys@vuje.sk
IČO: 31450474 / **DIČ:** 2020392539 / **IČ DPH:** SK2020392539
Zapísaná v OR OS Trnava, odd. Sa, vložka č. 164/T
BANKOVÉ SPOJENIE: Tatra banka, a.s., č. ú. 2626004387/1100
IBAN: SK54 1100 0000 0026 2600 4387 / **BIC:** TATRSKBX

VYSVETLIVKY: [1] podľa PB - 63.0 (1 - verejne prístupné, 2 - interné, 3 - citlivé, 4 - mimoriadne citlivé)

Príloha č.3 / *Attachment No.3*

Výpočet tuhých vodičov

Calculations of tube connections.

Třetí výpočet se zaměřil na bezpečné dodržení doskokových vzdáleností a s tím související maximální tahy na konstrukce. Byla vybrána obdobná hodnota amin jako v podkladech (1,98 m). Výsledkem je montážní tabulka, která se velice podobá tabulce uvedené v podkladech (dobrá shoda ve stavech). Celkově se však výpočet liší v požadovaných maximálních zatíženích na konstrukce – 53 kN i mimořádných zatížení od zkratu (nejvýše Ff,d až 83 kN).

Zpracoval:

Ing. Jan Špetlík, Ph.D.
FEL ČVUT, Praha
Katedra elektroenergetiky

Príloha č.4 / *Attachment No.4*

Originálny rozpočet DVZ

Original budget BoQ from Tender

Príloha č.5 / *Attachment No.5*

Rozpočet pre navrhované riešenie DRS

DDI budget and BoQ

Príloha č.6 / *Attachment No.6*

Rozdielový porovnávací rozpočet DRS-DVZ

Comparative Budget and BoQ DDI-TD

Príloha č.7 / *Attachment No.7*

sa nachádza v samostatnej obálke
Dokumentácia pre realizáciu stavby (DRS) – PS 07 Rozvodňa 400 kV
placed in separate package
Design Documentation for Implementation (DDI) – PS 07 Distribution 400 kV

Súbor stavieb „Transformácia 400/110kV Bystričany“

Complex ES Bystričany – Transformation 400/110kV

Rozvodňa Bystričany - transformácia 400/110kV

Substation Bystričany - transformation 400/110kV

Zmenové konanie č. 4.1 – ČPS 30.1 elektrické ochrany Bystričany

Variation Order no. 4.1 – ČPS 30.1 Electric protections Bystričany

Vypracoval / *Created by*	**Ing. Bálint**
Kontroloval / *Checked by*	**Ing. Pasteľák**
Schválil / *Approved by*	**Ing. Szombath**

Zákazka č. / *Contract*	**Označenie** / *Document No.*	**Dátum** / *Date*
22 16 112		**03 / 2018**
Revízia / *Release*	**Status** / *Status*	**Výtl.** / *Copy*
01		

Content

1. Identification data

Construction:	Substation Bystričany - transformation 400/110kV
Site location:	Electric Station 220/110 kV Bystričany region: Trenčianský kraj district: Prievidza village: Bystričany cadastral area: Bystričany
Employer:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika
Operator:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika

2. Reasons for the Variation

At designing for the detail design of Bystričany switchyard – transformation 400/110 kV within the elementary system ČPS30.1 Electric protection, some facts were found out that require variation of the detail design of ČPS30.1 – Electric protection.

It was found out at designing that required parameters of the second distance protection in the Table of Technical Specifications (hereinafter referred to as TTS) mention an insufficient number of protection functions, analogue inputs, binary inputs and outputs. TTS does not reflect the situation that adding of bus bar W1 is considered in future, where higher hardware and software requirements for the protection terminal are required. Requested parameters of distance protection according to TTS:

- Analogue inputs: 4xI,4xU,
- Binary inputs and outputs: 24BI, 35BO
- Protection functions in the scope of 225FB,
- Signal LED – 15 pieces
- Communication IEC 61850 optic.

Parameters of distance protection offered in the tender:

- Analogue inputs: 4xI,4xU,
- Binary inputs and outputs: 35BI, 41BO
- Protection functions in the scope of 225FB,

- Signal LED – 16 pieces
- Communication IEC 61850 optic.

3. Reasoning

With regard to the found-out facts related to adding of bus bar W3, we as the responsible designer, proposed the solution reflecting the aforementioned adverse findings. We propose such parameters of the protection that will fully comply also after adding the bus bar W3 and related instrumentation. If change of protection is required, it will be possible to change settings of the protection without any additional costs for hardware and software.

Since digital protections fulfil an important function at protection of equipment, reliability of operation, minimise duration of adverse impacts on the equipment, switch off only a failed section, and ensure continuous supply of energy in undamaged parts of the grid, we propose to increase the considered parameters.

We propose the change of parameters in compliance with FIDIC – *Conditions of Contract for Plant And Design-Build Contract*, Clause 13.2.

Proposed parameters of distance protection:

- Analogue inputs: 8xI 8xU
- Binary inputs and outputs: 63BI, 44BO
- Protection functions in the scope of 350FB,
- Signal LED – 80 pieces
- Communication IEC 61850 optic.

4. Variation description

Differences between DRZ and DVZ are as follows:

- Add the module 1x IO208,
- Replace the module 2xIO205 without LED with 2 modules IO207 with LED,
- Add the module 2xIO207 with LED,
- Add 125FB.

The variation of specification relates to 3 distance protections – for V484, V485, and KSP.

5. Financial summary

Detail budget and bill of quantity (BoQ) is attached to this document.

a) Original budget BoQ from Tender – Annex No. 1.
b) DDI budget and BoQ – Annex No. 2.
c) Comparative budget and BoQ DDI-TDD – Annex No. 3.

Financial summary for the electric system – ČPS 30.1 Electric Protection Bystričany:

Variation order budget costs:	58,647.00 EUR
Original budget BoQ from Tender:	-39,738.00 EUR
Costs difference	18,909.00 EUR
Reasonable profit according to PCC 1.2 (5% of costs difference):	945,45 EUR
Variation order no. 4.1 – total costs	**19.854.45 EUR**

6. Completion Date Impact

This Variation does not influence overall completion date.

7. Attachments

Attachment no. 1 – Original budget BoQ from Tender ES Bystričany CPS30.1

Attachment no. 2 – DDI budget and BoQ for proposed solution ES Bystričany CPS30.1

Attachment no. 3 – Comparative budget and BoQ DDI-TDD ES Bystričany CPS30.1

Attachment no. 4 – Specification 7SA87_P1A146719_BystHZda

Attachment no. 5 – Approval of general designer

Attachment no. 6 – Approval of SEPS operator, e-mail dated 10/07/2017

Attachment no. 7 – TTS of the second distance protection of line

Attachment no. 8 – Placing of binary inputs and outputs of the second distance protection

Príloha č.1 / *Attachment No.1*

Originálny rozpočet ES Bystričany ČPS 30.1

Preliminary approval by Managing Director of Division of Development and Investment, SEPS

Príloha č.2 / *Attachment No.2*

Rozpočet pre navrhované riešenie ES Bystričany ČPS 30.1

Budget for proposed solution ES Bystričany CPS30.1

Príloha č.3 / *Attachment No.3*

Rozdielový, porovnávací rozpočet ES Bystričany ČPS 30.1

Difference comparing budget ES Bystričany CPS30.1

Príloha č.4 / *Attachment No.4*

Špecifikácia 7SA87_P1A146719_BystHZda

Specification 7SA87_P1A146719_BystHZda

Príloha č.5 / *Attachment No.5*

Súhlas generálneho projektanta

Approval of general designer

Príloha č.6-stanovisko GP ku ZK-04 PS30: 2.ochranný terminál Siemens

From: Michal.Dekys@vuje.sk [mailto:Michal.Dekys@vuje.sk]
Sent: Tuesday, July 11, 2017 9:01 AM
To: lubor.melovic@alterenergo.sk
Subject: RE: 170616 Complex Bystricany - Substation 400 kV Bystričany - zmena specifikácie ochrán Siemens

Ahoj,
S pozadovanou zmenou specifikacie druheho ochranneho terminalu suhlasime, nakolko parametre po zmene sa zhoduju z poziadavkami ktore sme uvadzali v TTS nasho projektu. Len pripominam ze pozadovanu zmenu musi schvalit aj investor.

Michal Dekys

Odoslané z môjho smartphonu Sony Xperia™

---- Ľubor Melovič píše ----

Ahoj Michal
Na základe nášho telefonického dohovoru, ťa prosím o **vyjadrenie zmene** špecifikácií druhého ochranného terminálu - dištančnej ochrany a zmene rozdielovej ochrany prípojníc samostatne.
S pozdravom

Ľubor Melovič
projektový manažér stavieb

Alter Energo, a.s.
Hlavná 561, 951 78 Kolíňany
Mob.: +421 915 793 520
@: lubor.melovic@alterenergo.sk

Príloha č.6 / *Attachment No.6*

Súhlas prevádzkovateľa SEPS e-mail z 10.7.2017

Approval of SEPS operator, e-mail dated 10/07/2017

e-mail 10.7.2017:

Pekný deň prajem,

ako doplnenie e-mailu z 14.6.2017, preposielam schválenie špecifikácie ochrán (Ing. Podmanický).

S pozdravom

Peter Merschitz

Od: Podmanický Marián <Marian.Podmanicky@sepsas.sk>
Odoslané: 6. júla 2017 16:42
Komu: Merschitz, Peter; Došek Juraj
Predmet: FW: Complex Bystricany - Substation 400 kV Bystričany - zmena specifikácie ochrán Siemens

Dobrý deň,
znovu posielam vyjadrenie k technickej špecifikácii ochrán Siemens. Priložené špecifikácie sú vyhovujúce.
Zo zmenou typu ROP z Siemens na ABB súhlasíme.
S pozdravom
Marián Podmanický

From: Podmanický Marián
Sent: Tuesday, June 20, 2017 2:37 PM
To: Došek Juraj (Juraj.Dosek@sepsas.sk) <Juraj.Dosek@sepsas.sk>
Subject: FW: Complex Bystricany - Substation 400 kV Bystričany - zmena specifikácie ochrán Siemens

Dobrý deň,
špecifikácie navrhnuté projektantom sú vyhovujúce.
S pozdravom
Marián Podmanický

From: Matej Bjaloncík [mailto:matej.bjaloncik@alterenergo.sk]
Sent: Monday, June 19, 2017 1:19 PM
To: Podmanický Marián <Marian.Podmanicky@sepsas.sk>
Cc: lubor <lubor.melovic@alterenergo.sk>
Subject: Complex Bystricany - Substation 400 kV Bystričany - zmena specifikácie ochrán Siemens

Dobrý deň,

Chcel by som Vás poprosiť o odsúhlasenie zmeny špecifikácie ochrán Siemens pre akciu Complex Bystričany:

V TTŠ je v požiadavkách objednávateľa chybne uvedený počet binárnych vstupov a výstupov druhého ochranného terminálu - dištančnej ochrany. Objednávateľ požaduje počet vstupov a výstupov navýšiť - požaduje min. 48 vstupov a 48 výstupov (oproti TD 24 vstupov a 35 výstupov)
Z tohto dôvodu je potrebné zmeniť finálnu špecifikáciu ochrán Siemens 7SA87 s vyhovujúcim počtom vstupov a výstupov – presná špecifikácia ochrany odsúhlasená SEPSom je v prílohe.
Zmena špecifikácie ochrán sa jedná pre stavby *Bystričany – 3ks*, *Horná Ždaňa – 2ks* a *Križovany – 1ks ochrán*.
Presná špecifikácia ochrán je v prílohe.

Dané riešenie má vplyv na cenu, nemá vplyv na termín realizácie.

Ďakujem

Ing. Matej Bjaloňčík
Projektant

tel.:+421 918 743513
email: matej.bjaloncik@alterenergo.sk

Príloha č.7 / *Attachment No.7*

TTŠ Druhej distančnej ochrany

TTS of the second distance protection of line

Príloha č.8 / *Attachment No.8*

Osadenie binárnych vstupov a výstupov druhej distančnej ochrany

Placing of binary inputs and outputs of the second distance protection

Complex ES Bystričany – Transformation 400/110kV

Substation Bystričany - transformation 400/110kV

Variation Order no. 7 – SO 311 Ground works

Created by **Ing. Voško**

Checked by **Ing. Pastelák**

Approved by **Ing. Szombath**

Contract	*Document No.*	*Date*
222 16 112		**10 / 2018**

Release	*Status*	*Copy*
01		

Content

1. Identification data

Construction:	Substation Bystričany - transformation 400/110kV
Site location:	Electric Station 220/110 kV Bystričany region: Trenčianský kraj district: Prievidza village: Bystričany cadastral area: Bystričany
Employer:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika
Operator:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika

2. Reasons for the Variation

When drawing up the project documentation for the realization of the "Rozvodňa Bystričany Transformation - 400 / 110kV Transformation", there were found the facts that required a change of the solution of SO 311 - Earth modifications.

Measurements of the real bearing capacity of the base joint (basement - ground plan) during the realization of the object SO 311 - Ground treatment and S0 690 - Communications and reinforced surfaces were found to be inconsistent with the required parameters in DVZ project.

I quote the DVG report:

"Compacted embankments will be made of earth with min. the "appropriate" or from the gravel, with the maximum layer being realized. 30cm thick. If necessary, lime stabilization on the construction site (assuming 25cm). It is necessary to observe the prescribed parameters on the plane Edef, 2 ≥ 45MPa + Edef2 / Edef1 ≤ 2.5, by making a metallurgical test directly on site. If the parameters are not confirmed by the metallurgical test, it will be necessary to consult the geotechnics directly on site and to take measures to ensure the necessary parameters. "

Under the conditions encountered in the construction, the conditions for the realization of the projected embankment are inappropriate with the water soaked surface formed by soils of soft to tough consistency. The required parameter on a ground plane Edef, 2 ≥ 45MPa + Edef2 / Edef1 ≤ 2.5 could not be achieved, the soils considered in the compacted embankment are impossibility to compact at higher moisture than the optimum compaction moisture and are characterized by low geotechnical parameters (Annex 3). The proposed procedure follows the project DVZ process with lime stabilization on the surface of the ground plane (assumption 25 cm), it is possible to use the material middle plastic clay (F6 CI) as a conditional appropriate, but only under the condition that its properties are modified - for example, by using lime on the plain, but not

only for surface of the ground plane, for each embedded and compacted layer (possibly as a sandwich embankment with alternating layers of original soil with lime stabilization and gravel layer). During excavation phase it was not possible to clearly separate the middle plastic clay (F6 CI) and the high-plastic clay (F8 CH).

3. Reasoning

During the elaboration of the project documentation for the realization of the "Rozvodňa Bystričany - transformation 400 / 110kV" was based on section 2 of this report changed solution with 311 - Earth modifications.

The reason for the change in the solution was the fact that the excavated soil - high plastic (F8 CH) is not suitable for pavement and embankments, and middle plastic clay (F6 CI) is only conditionally suitable for the roadbed and the embankments in the sense STN 73 6133. Due to the complicated realization by improving the soil properties by mixing with lime stabilization and making sandwich embankments in a relatively variable terrain in project DRS was projected embankment with an incoherent soil, with appropriate treatment contact of layers. Due to the replacement of the subsoil for incoherent soil it was necessary to supplement dewatering or more precisely drainage the embankment.

4. Variation description

The change in budgetary costs was mainly influenced by:

- removing and storing the soil of the anticipated embankment (not suitable for roadbeds and hoppers),
- removing and storing soil from excavations (not suitable for pavements and pavements), as surplus from other objects (originally intended for the embankment),
- import of suitable soil (gravel, gravel) for the embankment and communication plan
- designing the embankment itself, shaping the substrate, making a separating layer and suitable dewatering.

5. Financial summary

Detailed budget and bill of quantity (BoQ) is attached to this document.

a) Original budget BoQ from Tender – attachment no.1
b) Comparative Budget and BoQ DDI-TD – attachment no.2

Financial summary for SO311 – Ground works:

Budget items for the proposed solution together:	344 733,94 EUR
Total deductible items:	-30 613,25 EUR
Cost difference	**314 120,69 EUR**
Reasonable profit according to PCC 1.2 (5% of costs difference):	15 706,03 EUR
Total costs for the Amendment Proceeding:	**329.826,72 EUR**

6. Completion Date Impact

This Variation does not influence overall completion date.

7. Attachments

Attachment no. 1 – Construction General designer statement

Attachment no. 2 – Assessment of ground treatment solutions for the production of embankments - SO 311 Earth modifications

Attachment no. 3 – Designer DDI statement

Attachment no. 4 - Protocol on soil compaction control

Attachment no. 5 – Original budget BoQ from Tender

Attachment no. 6 – DDI Budget and BoQ

Attachment no. 7 – Comparative Budget and BoQ DDI - TD

Attachment no. 8 – Calculation and graphic attachment for specification of material

Attachment no. 9 – Design Documentation for Implementation (DDI) – SO 311 Ground works

Attachment No.1

Construction General designer statement

VUJE, a.s.
Okružná 5 • 918 64 Trnava • Slovenská republika

vúje

Ing. Tomáš Bálint
SPIE Elektrovod, a.s.
Prievozská 4C
824 66 Bratislava 26

VÁŠ LIST ČÍSLO / ZO DŇA	NAŠE ČÍSLO	KÓD CITLIVOSTI[1)]	VYBAVUJE / LINKA	DÁTUM
-	17970/2018	3	Ing. Dekýš/0905587318	9.10.2018

VEC
Vyjadrenie generálneho projektanta k zmenovému konaniu č.07 pre stavbu „Rozvodňa Bystričany - transformácia 400/110kV

Po preštudovaní návrhu pre zmenu projektu realizácie stavby a obdržaných podkladov k zmenovému konaniu č.7 môžeme skonštatovať, že vykonaním popísaných zmien dochádza k podstatnému zásahu do nášho diela. Zámenou pôvodnej zeminy z výkopov sa ale kvalitatívne vylepšuje naše riešenie v rámci realizácie násypu zemného telesa. Naviac zhotovenie drenážneho systému pre takto navrhnuté zemné teleso tiež prispieva k lepšiemu odvedeniu zrážkových vôd mimo zaťažovanú časť násypu (komunikáciu). Navrhované riešenia zvyšujú kvalitu a hodnotu diela a nie sú v rozpore s ideou navrhnutou v dokumentácii pre výber zhotoviteľa. Preto s navrhnutou zmenou súhlasíme.

SUBJECT
Statement of the general designer for the change of procedure no. 7 – SO 310 Land modifications for the construction of „Substation Bystričany – transformation 400/110kV"

After the examination of the proposal for the change of the project of realization of the building and of the obtained documents to the modified procedure no.7 we can state, that the changes described make a significant impact on our work. By replacing the original soil from the excavations is improving quality of design solution in the realisation of framework the earth's body.
In addition, the drainage system for the so-called earth body also contributes to better drainage of the rainwater outside the loaded part of the embankment (communication). The proposed solutions increase the quality and value of the work and are not inconsistent with the idea suggested in the supplier's documentation. That is why we agree with the proposed change.

Ing. Michal Dekýš
Vedúci oddelenia 1240
Head of Unit 1240

TEL: 0905587318 / **EMAIL:** michal.dekys@vuje.sk
IČO: 31450474 / **DIČ:** 2020392539 / **IČ DPH:** SK2020392539
Zapísaná v OR OS Trnava, odd. Sa, vložka č. 164/T
BANKOVÉ SPOJENIE: Tatra banka, a.s., č. ú. 2626004387/1100
IBAN: SK54 1100 0000 0026 2600 4387 / **BIC:** TATRSKBX

Attachment No.2

Assessment of ground treatment solutions for the production of embankments - SO 311 Earth modifications

SPIE Elektrovod, a.s.
Ing. Tomáš Bálint
Prievozská 4C
824 66 Bratislava 26

SK verzia:
Stavba: Rozvodňa Bystričany - transformácia 400/110kV

Vec: Posúdenie riešenia zemných úprav pri zhotovení násypu - SO 311 Zemné úpravy/

Úvod: Posudok bol vypracovaný na základe žiadosti zadávateľa ako podklad pre vyhotovenie realizačného projektu stavebného objektu SO 311 Zemné úpravy s dôrazom na nárast zemných prác.

Podklady:

- projekt - Súťažné podklady pre výber zhotoviteľa Rozvodňa Bystričany - transformácia 400/110kV, Arch. č. ZD 1209814/SPVZ/00, dátum: 02/2016
- Správa z inžinierskogeologického prieskumu, Evidenčné číslo geologických prác: 585/2014, Bystričany – rozvodňa 400kV, december 2014, RNDr. Marián Fabian, Inžinierskogeologický prieskum, Koprivnická 11, 841 01 Bratislava.

Posudok:
V predmetnom stavebnom objekte je nesúlad medzi technickou správou (1209814_SPVZ_SO311_02a_SVK) v ktorej je uvedené: *„Zhutnené násypy sa budú vzhľadom na to, že na nich budú realizované komunikácie robiť zo zeminy s min. zatriedením „vhodná" resp. zo štrkodrvy s tým, že sa budú realizovať po vrstvách max. 30cm hrubých"* a výkazom výmer – stavebná časť (výkaz výmer_SO_BYST1), kde je uvedené pri množstvách zodpovedajúcich množstvu pre násyp iba:

- *„Odkopávka a prekopávka nezapažená v hornine 3, nad 1000 do 10000 m3"* a
- *„Vodorovné premiestnenie výkopku po spevnenej ceste z horniny tr.1-4 v množstve do 100 m3 na vzdialenosť do 500 m".*

Keďže vykopaná zemina (navážka, súdržná zemina íl so strednou plasticitou a íl s vysokou plasticitou) v zmysle STN 73 6133 nie je vhodná do podložia vozovky a do násypov je len podmienečne vhodná je tu rozpor s tým, čo sa uvádza ako požiadavka pre materiál do násypu. Takže, ak sa v realizačnom projekte navrhuje násyp z nesúdržného materiálu (napr. štrku) je to v súlade s touto požiadavkou a rovnako aj s platnými súvisiacimi normami.

Je zrejme že výkaz výmer a následne rozpočet, ktorý z výkazu vychádza neuvažuje s:

- odvozom prebytočnej odkopanej zeminy na skládku (nevhodnej pre zhotovenie násypu - F6/F8 a navážka)
- poplatkami za uskladnenie tejto zeminy
- nákupom a dovozom vhodnej zeminy na vytvorenie násypu

Následne sa v projekte Súťažné podklady pre výber zhotoviteľa Rozvodňa Bystričany - transformácia 400/110kV neuvažovalo dostatočne s prípravou podložia pre vytvorenie nového zemného telesa. Podľa IG prieskumu sa nachádza v podloží násypu (povrchová vrstva) silt so strednou plasticitou slabo humusovitý (cca 20cm), alebo íl s vysokou plasticitou, prípadne navážka (40 cm), ktorá nie je vhodná pre založenie násypu a je bez ďalšieho využitia a musí sa odviezť na skládku. Postup realizácie takýchto

násypov sa požaduje realizovať štandardne v zmysle platných noriem (napr. STN 73 3050, príp. STN 73 6133), kde sa uvádzajú požiadavky na úpravu podložia, odstránenie povrchovej vrstvy (humus, príp. navážka), „zazubenie" svahu – vytvorenie stupňov, ktoré majú za úlohu stabilizovať násyp na svahu, odseparovanie podkladných ílovitých vrstiev a nesúdržného materiálu násypu pomocou geotextílie, zhotovovanie svahu po vrstvách s následnou kontrolou hutnenia atď. Zapracovanie týchto postupov, predpisov a požiadaviek v zmysle platných noriem si v podrobnejšom spracovaní realizačného projektu vyžiadalo zmeny v rozsahu zemných prác, konkrétne nárast objemov zemín s následnými nákladmi na manipuláciu s týmito objemami a nákladmi na uskladnenie nevhodných zemín resp. nákup vhodného materiálu do násypov.

Literatúra:

- STN 73 3050 - Zemné práce. Všeobecné ustanovenia
- STN 73 6133 - Stavba ciest. Teleso pozemných komunikácií
- STN 73 1001 - Geotechnické konštrukcie. Zakladanie stavieb
- EN 1991-7 - Navrhovanie geotechnických konštrukcií

V Bratislave
september 2017

Ing. Miroslav Černý, PhD.

- autorizovaný stavebný inžinier
- člen *Česko-Slovenskej spoločnosti pre mechaniku zemín a geotechnické inžinirstvo* – CaSVMZZS
- člen *Medzinárodnej spoločnosti pre mechaniku zemín a geotechnické inžinierstvo* – ISSMFE
- člen *Technickej komisie TK14 Geotechnika, Úrad pre normalizáciu, metrológiu a skúšobníctvo SR*

EN version:

Structure: Substation Bystričany – transformation 400/110kV

Subject: Assessment of solution of the ground modifications for the embankment – SO 311 Land modifications

Introduction: The assessment was prepared base on a request from the contracting authority as a basis for the execution of the realisation project SO 311 Land modifications with an emphasis on the increase of the earthworks.

Documents project

- Competitive documents for the selection of contrator of substation Bystričany – transformation 400/110kV, Arch. No. ZD 1209814/SPVZ/00, date:02/2016
- Report from engineering geological survey, registry number for geolog. Works: 585/2014, Bystričany – substation 400kV, December 2014, RNDr. Marián Fabian, engineering geological survey, Koprivnická 11.

Review:

In the building object in question there is a discrepancy between the technical report (1209814_SPVZ_SO311_02a_SVK) which stated: "Compacted embankments will be made of earth with min. the "appropriate" or " from the gravel, with the maximum layer being 30cm thickness, because on them will be realized roads. " and summation statement – building part (report of quantities_SO_BYST1), where it is stated at the amounts corresponding to the quantity for the embankment only:

-„non retaining excavation and movement in the rock 3, over 1000 till 10000m3" and

- „horizontal displacement of the excavation along a reinforced road in the rock 4 up to 100m3 and distance up to 500m."

As the excavated soil (landfill, cohesive soil loam with moderate plasticity and clay with high plasticity) in accordance with STN 73 6133 is not suitable for subgrade of the road and into the embankment is only conditionally suitable here, contrary to what is stated as a requirement for the material to embankment. Therefore, if is in realization project stated that embankment must be in non-bound material (eg. Gravel) it should comply with this requirement as well as the applicable related standards.

It is obvious that the summation statement and consequently the budget that is based on the report does not consider:

- removal of excess ground soil into landfill (not suitable for container production - F6 / F8 and embankment)
- fees for the storage of this soil
- the purchase and import of suitable soil to form the embankment

Subsequently, in the project Competitive documents for selection of contractor for substation Bystričany - transformation 400/110kV was not considered sufficiently with the preparation of substrates to create a new earth body. According to the EG survey, in the subsoil (surface layer)is located silt with midlle plasticity and low-humus (20 cm) or a silt with high plasticity, or clay (40 cm) load, which is not suitable for the embankment and is without further use, and must be taken to a landfill. The procedure for the implementation these embankments is required to be carried out as standard in accordance with valid standards (eg STN 73 3050, or STN 73 6133), which specifies requirements for the treatment of the subsoil, removal of the surface layer (humus or embankment), „creating steps" of the slope, which are designed to stabilize the slope action, separation of base clay

layers and non-bearing material by geotextile, making the slope by layers followed by compaction control, etc. The incorporation of these procedures, regulations and requirements in accordance with the standards in force in the detailed elaboration of the implementation project required changes in the extent of earthworks, namely the increase of the volumes of the soil with the subsequent costs of handling these volumes and the costs of storing inappropriate soils, purchase of suitable material into the embankment.

Literature:

- STN 73 3050 - Earthworks. General provisions
- STN 73 6133 - Road construction. Body of road communications
- STN 73 1001 - Geotechnical structures. Foundation of buildings
- EN 1991-7 - Design of geotechnical structures

In Bratislava
September 2017

Ing. Miroslav Černý, PhD.

- authorized civil engineer 5634*I3
- member of the Czech-Slovak Society for Soil Mechanics and Geotechnical Engineering - CaSVMZZS
- member of the International Society for Soil Mechanics and Geotechnical Engineering - ISSMFE
- *member of the Technical Commission TK14 Geotechnics, Office for Standardization, Metrology and Testing of the SR*

Attachment No.3

Designer DDI statement

SK verzia:

Odôvodnenie nárastu zemných prác:

Zemina z výkopových prác s ktorou sa v DVZ uvažovalo ako so zeminou pre zhotovenie násypu na tento účel je nevhodná. Predpísané podmienky pre zhutnenie podľa projektu DVZ nie je možné dodržať, čo je doložené aj „Protokolom o kontrole hutnenia", príloha č. 3. Následne v projekte DRS bolo nutné vyriešiť predmetný násyp v zmysle STN 73 6133, kde je uvedené že súdržná zemina v výkopov – íl s vysokou plasticitou (F8 CH) nie je vhodný do podložia vozovky a do násypov, a íl so strednou plasticitou (F6 CI) je len podmienečne vhodný do podložia vozovky a do násypov. Tu prvý rozpor s tým, čo sa uvádza ako požiadavka pre materiál do násypov v stupni DVZ.

Nárast zemných prác spočíva v odvezení všetkej prebytočnej zeminy (nevhodnej na zhotovenie násypu) a dovezenie zeminy vhodnej na tento účel.

Odôvodnenie projektového riešenia:

Vykopaná zemina (súdržná zemina, íl so strednou plasticitou – F6 CI) v zmysle STN 73 6133 nie je vhodný do podložia vozovky a do násypov je len podmienečne vhodný je tu rozpor s tým, čo sa uvažuje ako požiadavka pre materiál do násypov. V DVZ sa spomína aj možnosť zhotovenia násypu zo citujem: *„v časti realizácie násypov postupovať po vrstvách max. 30cm hrubých so zeminou s min. zatriedením „vhodná" resp. zo štrkodrvy"*, ale vo výkaze výmer DVZ sa s dovozom vhodnej zeminy, resp. štrkodrvy nepočíta.

Je možne použiť aj tento materiál (F6 CI), ako podmienečne vhodný, ale len za podmienok, že sa jeho vlastnosti upravia - zlepšia, napr. pomocou vápna, ale nie len na pláni, ale pre každú zabudovanú a zhutnenú vrstvu (pripadne ako sendvičový násyp so striedaním vrstiev prevápnenej zeminy a štrkovej vrstvy). Toto riešenie nie je možné, lebo vo fáze výkopov nebolo možné jednoznačne odseparovať íl so strednou plasticitou (F6 CI) a íl s vysokou plasticitou (F8 CH), navyše tieto práce nie sú v DVZ uvedené.

Z projektového riešenia DRS vyplýva, že sa nevhodná zemina odstráni a zemné práce sa budú realizovať v zmysle platných noriem STN 73 3050, príp. 73 6133, kde sa uvádzajú požiadavky na úpravu podložia, zazubenie svahu, odstránenie nevhodnej zeminy, odseparovania jednotlivých vrstiev pomocou geotextílií a vybudovanie drenáže a vsakovacích jám pre odvodnenie zrážkových resp. presakujúcich vôd cez vybudovaný násyp na nepriepustné (resp. slabo priepustné) podložie násypu, čo v spracovaní realizačného projektu daného stavebného objektu malo za následok zmeny v objemoch materiálov (zemín) a v náraste rozsahu zemných prác.

EN Version:

Justification of the increase in earthworks:

The excavation soil that was considered in the DVZ as soil for the production of the embankment for this purpose is inappropriate. The prescribed conditions for compaction according to the DVZ project can not be complied with, which is also documented by the "Compactation Control Protocol", Annex no. 3. Subsequently, in the DRS project it was necessary to solve the embankment in accordance with STN 7 6133, which states that coarse earth in a high plasticity excavation (F8 CH) is not suitable for pavements and embankments, and medium-pored clay F6 CI) is only conditionally suited to the pavement and into embankment. This is the first contradiction with what is referred to as the requirement for material in the embankments in DVZ.

The increase in earthworks consists in removing all excess earth (inappropriate for the production of the embankment) and the introduction of soil suitable for this purpose.

Grounds for the project solution:

The excavated soil (cohesive soil, middle-grade clay - F6 CI) in the sense of STN 73 6133 is not suitable for the pavement and is only contingently suitable for the borehole, there is a contradiction with what is considered as a requirement for the material to the embankment. The DVZ also mentions the possibility of making the embankment by quoting: "In the part of the realization of the embankments proceed on layers max. 30cm coarse with soil with min. the "appropriate" or " from the gravel ", but in the statement the size of the DVZ with the import of suitable soil or crushed gravel, do not count.

It is also possible to use this material (F6 CI) as a conditionally suitable one, but only on condition that its properties are modified - using lime, but not just plain, but for each built-in and compacted layer (possibly as a sandwich embankment with alternating layers of pre-soiled soil and gravel layer). This solution is not possible because in the excavation phase it was not possible to clearly separate the middle plastic (F6 CI) and the high plasticity clay (F8 CH), in addition, these works are not mentioned in DVZ.

The DRS project solution shows that the unsuitable soil will be removed and the earthworks will be carried out in accordance with the valid STN 73 3050, 73 6133, which specifies the requirements for laying of the subsoil, gouging of the slope, removal of inappropriate soil, separation of the individual layers by means of geotextiles and construction of drainage and pumping pits for drainage of precipitation respectively. of the leaking water through the built-in embankment to the impervious (or poorly permeable) bed of embankment, resulting in the processing of the implementation project of the structure resulted in changes in the volume of material (soils) and the increase in the scope of earthworks.

V Bratislave 11/2017 Ing. Michal Voško

Attachment No.4

Protocol on soil compaction control

DRILL, s.r.o.
Inžinierska geológia
Hydrogeológia
Geológia životného prostredia

PROTOKOL O KONTROLE HUTNENIA
PODĽA STN 73 6133

Stavba: TR 400 kV Bystričany, 262 16 112 ,
Objednávateľ: SPIE Elektrovod, a.s. Prievozská 4C, 824 66 Bratislava
Zodpovedný riešiteľ: RNDr. Martin Šarík
Riešiteľská organizácia: Drill, s.r.o., Gruzínska 9, 821 05 Bratislava

1. ÚVOD

Na základe objednávky č. 112 16 400 6 spol. SPIE Elektrovod, a.s., som vykonal dňa 22. 11. 2017 kontrolné skúšky zhutnenia statickou zaťažovacou doskou. Skúšky boli vykonané na zhutnenej pláni v mieste výstavby novej TR v Bystričanoch. Na základe makroskopického vyhodnotenia je pláň tvorená ílmi so strednou plasticitou (F6 CI) až ílmi s vysokou plasticitou (F8 CH), vo výkopoch v mieste meraní pevnej až tvrdej konzistencie. V okolí je povrch premočený a povrch je tvorený zeminami mäkkej až kašovitej konzistencie.

2. TERÉNNE SKÚŠKY

Statické zaťažovacie skúšky (SD) boli vykonané Westergaardovou doskou (priemer Ø 300 mm). Každá skúška obsahuje dva zaťažovacie/odľahčovacie cykly, každé zaťaženie a odľahčenie sa vykoná v 4 zaťažovacích krokoch. Dosah merania zariadenia je do 0,8 m.

3. ZÁVER

Požiadavka projektu na geotechnické parametre zemín v mieste meraní nebola stanovená, skúšky boli vykonané za účelom preverenia geotechnických parametrov zemín in situ. Výsledky E_{def2} odpovedajú vyššie uvedeným zeminám triedy F6 CI a F8 CH. Pomery modulov E_{def2}/E_{def1} boli do 2,5, čo potvdzuje že materiál nebol odkopom nakyprený a bol dostatočne zhutnený. Výsledky statických zaťažovacích skúšok sú uvedené v prílohe Protokolu o kontrole hutnenia. Zeminy F6 CI a F8 CH sú v zmysle STN 72 1002 (Scheibleho kritéria) nevhodné do násypov (sú nebezpečne namŕzavé, napučavé). Pri vyšších vlhkostiach než je optimálna zhutňovacia vlhkosť sú nezhutniteľné a vyznačujú sa nízkymi geotechnickými parametrami.

V Bratislave 23. 11. 2017 RNDr. Martin Šarík

Attachment No.5

Original budget BoQ from Tender

Attachment No.6

DDI Budget and BoQ

Attachment No.7

Comparative Budget and BoQ DDI - TD

Attachment No.8

Calculation and graphic attachment for specification of material

Attachment No.9

Design Documentation for Implementation (DDI) – SO 311 Ground works

Útvar 4020 - Projekcia DEM

Rozvodňa Bystričany - transformácia 400/110kV

Substation Bystričany - transformation 400/110kV

.

SO 311 Zemné úpravy

SO 311 Ground works

.

Dokumentácia pre realizáciu stavby

DRS / Detail Design

Zák. č. / *Contract*	**Ozn. ZD** / *Document list No.*	**Dátum** / *Date*
222 16 112	**BYST=CCA+SO311&CAA_AA01**	**2017-10**
Revízia / *Release*	**Status** / *Status*	**Výtl.** / *Copy*
00	**Čistopis / Approved**	

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Zoznam dokumentácie / *Document List*

Stavba	**Rozvodňa Bystričany - transformácia 400/110kV**	**Dátum**/*Date*	**2017-10**
Building	*Substation Bystričany - transformation 400/110kV*	**OD**/*DC*	**BYST=CCA+SO311&CAB_AB01**
Časť	**E. Dokumentácia stavebných objektov**	**Stupeň**/*Doc. Step*	**DRS/Detail Design**
Part	*E. Building objects*	**Zák č.**/*Contract No.*	**222 16 112**
PS-SO	**SO 311 Zemné úpravy**	**Vypr.**/*Cre´d by*	**Ing. Voško**
Unit-Obj	*SO 311 Ground works*	**Strana**/*Page*	**1**

Pč *No*	Označenie dokumentu (OD) *Document Code (DC)*	Re *Re*	Názov dokumentu *Document title*	A4 *A4*	Poznámka *Note*
01	BYST=CCA+SO311&CAA_AA01		TITULNÝ LIST *TITLE LIST*	1	TEXT *TEXT*
02	BYST=CCA+SO311&CAB_AB01		ZOZNAM PROJEKTOVEJ DOKUMENTÁCIE *DOCUMENT LIST*	1	TEXT *TEXT*
03	BYST=CCA+SO311&CDB_AC01		TECHNICKÁ SPRÁVA *TECHNICAL REPORT*	8	TEXT *TEXT*
04	BYST=CCA+SO311&CLD_DA01		SITUÁCIA - ODSTRÁNENIE KROVÍN *SITUATION - REMOVAL OF SHRUBS*	12	VÝKRES *DRAWING*
05	BYST=CCA+SO311&CLD_DA02		SITUÁCIA - HRUBÁ ÚPRAVA TERÉNU 1 *SITUATION - GROOMED TERRAIN 1 FOR EMBANKMENT BUILDING*	18	VÝKRES *DRAWING*
06	BYST=CCA+SO311&CLD_DA03		SITUÁCIA - HRUBÁ ÚPRAVA TERÉNU 2 *SITUATION - GROOMED TERRAIN 2*	18	VÝKRES *DRAWING*
07	BYST=CCA+SO311&CLU_DD01		POZDĹŽNY PROFIL - REZ 1-1, REZ 2-2 *LONGITUDAL PROFILE - PF. 1-1, PF. 2-2*	21	VÝKRES *DRAWING*
08	BYST=CCA+SO311&CLU_DD02		POZDĹŽNY PROFIL - REZ 3-3, REZ 4-4 *LONGITUDAL PROFILE - PF. 3-3, PF. 4-4*	21	VÝKRES *DRAWING*
09	BYST=CCA+SO311&CLU_DD03		POZDĹŽNY PROFIL - REZ 5-5, REZ 6-6 *LONGITUDAL PROFILE - PF. 5-5, PF. 6-6*	21	VÝKRES *DRAWING*
10	BYST=CCA+SO311&CLU_DD04		POZDĹŽNY PROFIL - REZ 7-7, REZ 8-8 *LONGITUDAL PROFILE - PF. 7-7, PF. 8-8*	12	VÝKRES *DRAWING*
11	BYST=CCA+SO311&CLU_DD05		VZOROVÝ REZ (REZ 8-8) *MODEL CROSS SECTION (PF. 8-8)*	3	VÝKRES *DRAWING*
12	BYST=CCA+SO311&CLU_DD06		DRENÁŽ POZDĹŽNY PROFIL VETVA A *DREINAGE - LONGITUDAL PROFILE PART A*	30	VÝKRES *DRAWING*
13	BYST=CCA+SO311&CLU_DD07		DRENÁŽ POZDĹŽNY PROFIL VETVA C *DREINAGE - LONGITUDAL PROFILE PART C*	24	VÝKRES *DRAWING*
14	BYST=CCA+SO311&CLU_DD08		DRENÁŽ POZDĹŽNY PROFIL VETVA B, VETVA D *DREINAGE - LONGITUDAL PROFILE PART B, PART D*	15	VÝKRES *DRAWING*
15	BYST=CCA+SO311&CLU_DD09		VZOROVÝ REZ - VSAKOVACÍ OBJEKT *MODEL CROSS SECTION - DRAINAGE OBJECT*	2	VÝKRES *DRAWING*

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	Popis zmeny/*Revision description*	**Dátum**/*Date*	**Vykonal**/*Changed by*

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Vypr/*Creatd*	Ing. Voško	**Zákazkové č.**/*Contract No.*		**Príloha**/*Encl.*
Prev/*Chckd*	Ing. Gomba	**222 16 112**		
Schvál/*Rvwd*	Ing. Bálint	**Dátum**/*Date*	**2017-10**	
Stavba *Building*	**Rozvodňa Bystričany - transformácia 400/110kV** *Substation Bystričany - transformation 400/110kV*	**Stupeň** *Doc. Step*	**DRS** *Detail Design*	**03**
Časť *Part*	**E. Dokumentácia stavebných objektov** *E. Documentation of building objects*	**Mierka** *Scale*		
PS-SO *Unit-Object*	**SO 311 Zemné úpravy** *SO 311 Ground works*	**Počet A4** *Size (A4)*	**8**	
Názov *Title*	**Technická správa** *Technical Report*	**Označenie zoznamu dok.**/*Document list No.* BYST=CCA+SO311&CAA_AA01		
		Označenie dokumentu/*Document Code* **BYST=CCA+SO311&CDB_AC01**		

1 Content:

Complex ES Bystričany – Transformation 400/110kV

Substation Bystričany - transformation 400/110kV

Variation Order no. 9 – SO 311 Ground Modifications - Removal of Rubble

Created by **Ing. Gomba**

Checked by **Ing. Pasteľák**

Approved by **Ing. Szombath**

Contract	*Document No.*	*Date*
222 16 112		**09 / 2018**

Release	*Status*	*Copy*
01		

Content

1. Identification data

Construction:	Substation Bystričany - transformation 400/110kV
Site location:	Electric Station 220/110 kV Bystričany region: Trenčianský kraj district: Prievidza village: Bystričany cadastral area: Bystričany
Employer:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika
Operator:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika

2. Reasons for the variation

During the realization of the "Substation Bystričany - 400 / 110kV Transformation" construction, the following facts were identified that require changes in the earthworks. Specifically, it is SO 311 - Ground modification – remove rubble, where a large landfill of building block and construction waste was excavated during excavation works.

3. Reasoning

The landfill of construction waste and building block interferes into the space of service communications area and into the slope of the embankment on the northern side of the new R 400kV site. This landfill was not identifiable during the design works, during the inspection of the future site (the landfill was covered with soil and grass) and was not detected by exploratory drilled probes of the geological survey (Bystričany - 400kV substation, Marián Fabian, Dec. 2014). The layout of the drilled probes was determined by the statics designer and was subject to the project requirements. The drilled probes were performed in the locations of the anticipated placement of the portal masts foundations and the sites of the future building sites.

4. Description of variation

This will be removed in its entirety. Construction waste and rubble are specified as inappropriate material in compacted feeders in accordance with valid standards. This work causes an increase in the volume of earthworks, consisting from the removal of the original landfills of the rubble. At the same time, the dredged rubble must be replaced with appropriate material in accordance with the valid standards STN 73 3050 and 73 6133 when implementing a suitable method for the treatment of the substrates to ensure its better stability

and separation of the different layers according to the design documentation BYST = CCA + S0311 & CAA_AA01. The responsible designer was chosen to separate the permeable layers of the embankment from impermeable substrate layers by suitable geotextile, and to complement the slope construction by drainage the heel of the slope.

5. Financial summary

Detailed budget and bill of quantity (BoQ) is annex to this document.

a) DDI Budget and BoQ – annex no.2

Financial summary for SO 311 - Ground modification – remove rubble:

Budget items for the proposed solution together:	166 596,11 EUR
Total deductible items:	0,00 EUR
Cost difference	**166 596,11 EUR**
Reasonable profit according to PCC 1.2 (5% of costs difference):	8 329,81 EUR
Total costs for the Variation Order no.9:	**174 925,92 EUR**

6. Impact on the completion date

This variation does not influence overall completion date.

7. Attachments

Attachment no. 1 - Construction General designer statement

Attachment no. 2 - DDI Budget and BoQ

Attachment no. 3 - Coordination drawing – subject of the amendment procedure no. 9

Attachment no. 4 - Technical report – Measurement and calculation of the cubes

Attachment no. 5 – Designer's statement

Attachment no. 6 – Photodocumentation

Attachment No.1

Construction General designer statement.

VUJE, a.s.
Okružná 5 • 918 64 Trnava • Slovenská republika

vůje

Ing. Tomáš Bálint
SPIE Elektrovod, a.s.
Prievozská 4C
824 66 Bratislava 26

VÁŠ LIST ČÍSLO / ZO DŇA	NAŠE ČÍSLO	KÓD CITLIVOSTI[1]	VYBAVUJE / LINKA	DÁTUM
-	17971/2018	3	Ing. Dekýš/0905587318	9.10.2018

VEC

Vyjadrenie generálneho projektanta k zmenovému konaniu č.09 - SO 310 Zemné úpravy pre stavbu „Rozvodňa Bystričany -transformácia 400/110kV

Po preštudovaní predložených podkladov konštatujem, že sa jedná o nepredvídateľné okolnosti, ktoré sa nedali zistiť počas prípravných a prieskumných geologických prác pri projekte pre stavebné konanie a projekte pre výber zhotoviteľa. Skládku stavebného odpadu nebolo možné určiť pri obhliadke miesta stavby a nebola zachytená ani vrtmi geologického prieskumu, ktorý bol vykonaný v jej tesnej blízkosti za účelom zistenia základových pomerov pre portálové základy vývodových portálov. Jej pozícia, ani prítomnosť nebola nikde zaznamenaná, takže projekt pre výber zhotoviteľa nemohol počítať s potrebou jej odstránenia.

SUBJECT

Statement of the general designer for the change of procedure no. 09 – SO 310 Land modifications for the construction of „Substation Bystričany – transformation 400/110kV"

After examining the submitted documents, I note that these are unpredictable circumstan-ces that could not be ascertained during preparatory and exploratory geological works for the construction project and selection of the contractor for this project. The landfill of the construction waste could not be determined when looking at the building and was not captured by the wells of the geological survey, which was carried out in close proximity in order to find base ratios for the gateway portal foundations. Its position and presence was not recorded anywhere, so the contractor selection project could not count on the need to remove it.

Ing. Michal Dekýš
Vedúci oddelenia 1240
Head of Unit 1240

TEL: 0905587318 / **EMAIL:** michal.dekys@vuje.sk
IČO: 31450474 / **DIČ:** 2020392539 / **IČ DPH:** SK2020392539
Zapísaná v OR OS Trnava, odd. Sa, vložka č. 164/T
BANKOVÉ SPOJENIE: Tatra banka, a.s., č. ú. 2626004387/1100
IBAN: SK54 1100 0000 0026 2600 4387 / **BIC:** TATRSKBX

VYSVETLIVKY: [1] podľa PB - 63.0 (1 - verejne prístupné, 2 - interné, 3 - citlivé, 4 - mimoriadne citlivé)

Attachment No.2

DDI Budget and BoQ

Attachment No.3

Coordination drawing – subject of the amendment procedure no. 9

Attachment No.4

Technical report – Measurement and calculation of the cubes

Attachment No.5

Designer's statement

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	Popis zmeny/*Revision description*	**Dátum**/*Date*	**Vykonal**/*Changed by*

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Vypr/*Creatd*	Ing. Voško	**Zákazkové č.**/*Contract No.*		**Príloha**/*Encl.*
Prev/*Chckd*	Ing. Gomba			
Schvál/*Rvwd*	Ing. Bálint	**Dátum**/*Date*	**2017-10**	
Stavba *Building*	**Rozvodňa Bystričany - transformácia 400/110kV** *Substation Bystričany - transformation 400/110kV*	**Stupeň** *Doc. Step*		**06**
Časť *Part*	**Zmenové konanie č.9** *Variation Order No. 9*	**Mierka** *Scale*		
PS-SO *Unit-Object*	**SO 311 Zemné úpravy - Odvoz sute** *SO 311 Ground works - Removal of Rubble*	**Počet A4** *Size (A4)*	**8**	
Názov *Title*	**Vyjadrenie** *Statement*	**Označenie zoznamu dok.**/*Document list No.*		
		Označenie dokumentu/*Document Code* **ZK-09_Priloha c6**		

Vyjadrenie k „Zmenovému konaniu č.9 – SO 311 Zemné úpravy – Odvoz sute."

Počas výkopových prác pre stavbu „Rozvodňa Bystričany - transformácia 400/110kV" boli zistené dve miesta – skládky sute – vybúraného stavebného materiálu – odpadu, pravdepodobne z predošlých stavebných prác. Tieto miesta nebolo možné identifikovať bežnou obhliadkou budúceho staveniska a neboli zistené ani pri prieskumných geologických prácach, ktoré pozostávali z realizácie a vyhodnotenia 8 vrtov (S1 až S8). Umiestnenie jednotlivých vrtov bolo určené zodpovedným projektantom statiky na základe rozmiestnenia základových konštrukcií budúcich stavebných objektov aj s ohľadom na ich silové pôsobenie. Skládky sute boli zistené až po začatí stavebných prác, po zhrnutí hornej vrstvy terénu.

S ohľadom na stabilitu pláne a násypu, ktorý vznikne na miestach zasypaných nájdeným stavebným odpadom je nutné túto stavebnú suť v celom objeme odstrániť a nahradiť ho inou zeminou vhodnou do násypov.

V prílohe č. 4 je sú zaznačené zamerané predmetné skládky stavebnej sute, ako i miesta vrtov IGHP.

V prílohe č. 5 sú geodetickými metódami zamerané a vypočítané objemy jednotlivých skládok stavebného odpadu.

V prílohe č. 7 je fotodokumentácia skládok sute.

Statement on „Amendment no. 9 – SO 311 Ground modification – the transfer of the rubble."

During the excavation works for the „Bystričany Transformation – 400/110kV Transformation", two sites – landfills of rubble – excavated building material – was identified by a general survey of the future site and were not found even in exploratory geological works that consisted of the realization and evaluation of 8boreholes (S1 to S8). The location of the individual boreholes was determined by the responsible structural engineer based on location of the foundation structures the future building, also with regard to their force effect. Landfills were found only after the construction works began, after the top layer of the terrain.

With regard to the stability plan and embankment, which was founded on the found submerged construction waste must be the building rubble throughout the volume removed and replaced by another suitable soil in embankments.

In Annex no. 4 are marked by target landfills of construction debris, as well as sites IGHP wells.

In Annex no. 5 are targeted geodetic methods and calculated volumes of individual construction waste dumps.

In Annex no. 7 is a photo documentation of landfill of the rubble.

Attachment No.6

Photodocumentation

c			
b			
a			
	Popis zmeny/*Revision description*	**Dátum**/*Date*	**Vykonal**/*Changed by*

SAG

alter energo

Vypr/*Creatd*	Ing. Voško	**Zákazkové č.**/*Contract No.*		**Príloha**/*Encl.*
Prev/*Chckd*	Ing. Gomba			
Schvál/*Rvwd*	Ing. Bálint	**Dátum**/*Date*	2017-10	
Stavba	**Rozvodňa Bystričany - transformácia 400/110kV**	**Stupeň**		
Building	*Substation Bystričany - transformation 400/110kV*	*Doc. Step*		**07**
Časť	**Zmenové konanie č.9**	**Mierka**		
Part	*Variation Order No. 9*	*Scale*		
PS-SO	**SO 311 Zemné úpravy - Odvoz sute**	**Počet A4**		
Unit-Object	*SO 311 Ground works - Removal of Rubble*	*Size (A4)*		
Názov *Title*	**Fotodokumentácia** *Photo documentation*	**Označenie zoznamu dok.**/*Document list No.*		
		Označenie dokumentu/*Document Code*		
		ZK-09_Priloha c7		

Complex ES Bystričany – Transformation 400/110kV

Substation Bystričany - transformation 400/110kV

Variation Order no. 10 – SO3525 Cable ducts

Created by **Ing. Janovjáková, Ing. Kuník**

Checked by **Ing. Pasteľák**

Approved by **Ing. Szombath**

Contract	*Document No.*	*Date*
222 16 112		**09 / 2018**
Release	*Status*	*Copy*
01		

Content

1. Identification data

Construction:	Substation Bystričany - transformation 400/110kV
Site location:	Electric Station 220/110 kV Bystričany region: Trenčianský kraj district: Prievidza village: Bystričany cadastral area: Bystričany
Employer:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika
Operator:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika

2. Reasons for the Variation

During preparation of the project for detail design (DDI), the technical solution SO 525 Cable duts was completed and specified.

3. Reasoning

In Tender documentation (TD) transfer and angle of turn was solved that cable duct was laid to wall in slant according to necessary angle for technology. This design is inappropriate for implementation. In DDI documentation is transfer made with sewerage PVC pipeline and necessary angle is made with segment pipeline, see attachment no.5 pics 1. and pics. 2.

In TD was cable route designed across "the live" part of substation near by Building of protections 3 (DO 3). For safe during works performance on construction is cable route in DDI designed outside "live" part. The length of cable ducts and number of cable shafts are changed. See attachment no.5 pics 3. and pics. 4.

The cable routes under the roads is necessary protect from wheel pressure of vehicle to avoid cable duct´s deformation. In TD is not designed this protection. In DDI is solved this protection. The cable routes under the roads are deeper laid and also shafts are deeper. Due to possibillity the wet of base the sandstone was replaced as a mass concrete. Due to the SEPS standards the concrete class for the shafts was changed. See attachment no.5 pics 5. and pics. 6.

In documentation TD was end of cable routes near by technology made with HDPE – electro fusion fitting with frame and modules Roxtec. The investor requests to use for cable rote´s end

RSN4 with frame and modules Roxtec. The price of both solution is approximately the same. This requirement need the design of earthing of the RSN4. See attachment no.5 pics 7.

During the implementation of reconstruction of cable channel was found bad condition. The distance from life part interfered with work space designed in TD. Design of waterproofing in TD was not correct with other layers of road. The waterproofing should be demaged by weather conditions. The design of cable channel was changed in DDI and concrete class and type were also changed.

See attachment no.5 pics 8. and pics. 9.

The covers PK1, PK2 near by BSP in documentation TD are in fire risk area. In DDI the covers are designed out of this area. See attachment no.5 pics 10. and pics. 11.

In documentation DT were not solved transfers through cable shafts for cable lighting SO 340 Outdoor lighting and cable for SO 646 Storage area for hazardous waste (markup of transfers on drawings PP10, PP11, PP13). DDI are this transfers designed, see attachment no.5 pics 12 and pics. 13.

4. Variation description

TD and DDI comparison – measures implemented:

a) Design of transfer of cable ducts through shaft´s wall with sewerage PVC pipeline
b) Necessary angle of cable ducts is designed with segment pipeline
c) The change of length of HDPE pipeline (cable routes out of "life" part of substation)
d) The change of number of cable shafts and elimination of fire covers
e) The change of depth of cable shafts, mass concrete under shafts and concrete class
f) The change cable end to cable end RSN4 with frame and modules Roxtec, design of earthing
g) New design of reconstruction existing cable channel
h) The design of transfers for SO 340 and SO 646

5. Financial summary

Detailed budget and bill of quantity (BoQ) is attached to this document.

a) Original budget BoQ from Tender – attachment no.2
b) DDI Budget and BoQ – attachment no.3
c) Comparative Budget and BoQ DDI-TD – attachment no.4

Financial summary for SO 525 Cable ducts:

Budget items for the proposed solution together:	602 201,48 EUR
Total deductible items:	-483 391,92 EUR
Costs difference	**117 809,56 EUR**
Reasonable profit according to PCC 1.2 (5% of costs difference):	5 890,48 EUR
Total costs for the Variation order no.10:	**123 700,04 EUR**

6. Completion Date Impact

This variation does not influence overall completion date.

7. Attachments

Attachment no.1 - Construction General designer statement

Attachment no.2 - Original budget BoQ from Tender

Attachment no.3 - DDI Budget and BoQ

Attachment no.4 - Comparative Budget and BoQ DDI-TD

Attachment no.5 – The graphic attachment

Attachment no.6 – The situation of cable routes and shafts

Attachment no.7 – TD: Planimetric drawing ACA05 (ACA07)

Attachment no.8 – TD: Floor plan of cable routes and connectivity

Attachment no.9 – DDI: Layout and cut-away view of bay No. 05 V485

Attachment no.10 – DDI: Layout and cut-away view of bay No. 07 V484

Attachment no.11 – DDI: Plan of cable routes between axes 4-8

Attachment no.12 – Design Documentation for Implementation (DDI) – SO525 Cable ducts

Attachment No.1

Construction General designer statement

VUJE, a.s.
Okružná 5 • 918 64 Trnava • Slovenská republika

vúje

Ing. Tomáš Bálint
SPIE Elektrovod, a.s.
Prievozská 4C
824 66 Bratislava 26

VÁŠ LIST ČÍSLO / ZO DŇA	NAŠE ČÍSLO	KÓD CITLIVOSTI[1]	VYBAVUJE / LINKA	DÁTUM
-	17972/2018	3	Ing. Dekýš/0905587318	9.10.2018

VEC

Vyjadrenie generálneho projektanta k zmenovému konaniu č.10 - SO 525 Káblové kanály pre stavbu „Rozvodňa Bystričany -transformácia 400/110kV

Po preštudovaní obdržaných podkladov k zmenovému konaniu č.10 môžeme skonštatovať, že vykonaním popísaných zmien dochádza k podstatnému zásahu do nášho diela. S týmito zmenami však súhlasíme, nakoľko vylepšujú naše riešenie v rámci realizácie. zohľadňujú náročnejšie podmienky na mieste stavby a zároveň rešpektujú pripomienky a požiadavky investora. Navrhované riešenia zvyšujú kvalitu a hodnotu diela a nie sú v rozpore s ideou navrhnutou v dokumentácii pre výber zhotoviteľa.

SUBJECT

Statement of the general designer for the change of procedure no. 10 – SO 525 Cable channels for the construction of „Substation Bystričany – transformation 400/110kV"

After reviewing the documents received for the change procedure no. 10 we can state that by making the described changes there is a substantial interference with our work. However, we agree with these changes as they improve our solution in the implementation. take into account the more demanding conditions at the site and at the same time respect the investor's comments and requirements. Suggested solutions increase the quality and value of the work and are not inconsistent with the suggested idea in the documentation for selection of contractor.

Ing. Michal Dekýš
Vedúci oddelenia 1240
Head of Unit 1240

TEL: 0905587318 / **EMAIL:** michal.dekys@vuje.sk
IČO: 31450474 / **DIČ:** 2020392539 / **IČ DPH:** SK2020392539
Zapísaná v OR OS Trnava, odd. Sa, vložka č. 164/T
BANKOVÉ SPOJENIE: Tatra banka, a.s., č. ú. 2626004387/1100
IBAN: SK54 1100 0000 0026 2600 4387 / **BIC:** TATRSKBX

Attachment No.2

Original budget BoQ from Tender

Attachment No.3

DDI budget and BoQ

Attachment No.4

Comparative Budget and BoQ DDI-TD

Attachment No.5

The graphic attachment

Attachment No.6

The situation of cable routes and shafts

Attachment No.7

TD: Planimetric drawing ACA05 (ACA07)

Attachment No.8

TD: Floor plan of cable routes and connectivity

Attachment No.9

DDI: Layout and cut-away view of bay No. 05 V485

Attachment No.10

DDI: Layout and cut-away view of bay No. 07 V484

Attachment No.11

DDI: Plan of cable routes between axes 4-8

Attachment No.12

placed in separate package

Design Documentation for Implementation (DDI) – SO525 Cable ducts

Súbor stavieb „Transformácia 400/110kV Bystričany“

Complex ES Bystričany – Transformation 400/110kV

Rozvodňa Bystričany - transformácia 400/110kV

Substation Bystričany - transformation 400/110kV

Zmenové konanie č. 16 – SO312 Odvodnenie rozvodne 400 kV

Variation Order no. 16 – SO312 Drainage of station

Vypracoval / *Created by*	**Ing. Janovjáková, Ing. Marenčík, Ing. Kuník**
Kontroloval / *Checked by*	**Ing. Pasteľák**
Schválil / *Approved by*	**Ing. Szombath**

Zákazka č. / *Contract*	**Označenie** / *Document No.*	**Dátum** / *Date*
222 16 112		**02 / 2019**
Revízia / *Release*	**Status** / *Status*	**Výtl.** / *Copy*
01		

Content

1. Identification data

Construction:	Substation Bystričany - transformation 400/110kV
Site location:	Electric Station 220/110 kV Bystričany region: Trenčianský kraj district: Prievidza village: Bystričany cadastral area: Bystričany
Employer:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika
Operator:	Slovenská elektrizačná prenosová sústava, a. s. Mlynské Nivy 59/A 824 84 Bratislava Slovenská republika

2. Reasons for the Variation

During preparation of the project for detail design (DDI), the technical solution SO 312 Drainage of station 400 kV was completed and specified. The changes result from the SO 525 Cable ducts solution influence on these two construction objects, because these SO are affected.

3. Reasoning

The design of shaft´s drainage is solved in SO 312. The position, numbers and construction of shafts is solved in SO 525. In Tender documentation (TD) in both SO is not design the modification of shaft´s bottom according to standart SEPS. The slope layer of cable shafts is solved in SO 312, documentation DDI. See attachment no.5 pics 1.

Due to avoid a "live" part of substation, to redisgn of drainage´s slope under the road and to connection of new 9 pcs cable shafts (SO 525), the length of the drainage pipe and the excavation volume where increased. See attachment no.5 pics 2 and pics 3.

According to request of substation´s servise and to eliminate demanding joints between draining pipeline DN 65 and draining pipeline DN 100 are draining pipelines for the cable shafts changed to DN 100. In TD this connection was not solved.

4. Variation description

TD and DDI comparison – measures implemented:

a) Completing slope layer in shafts

b) The change of drainage pipe

c) The change excavation volume

d) The change draining pipeline form DN 65 to DN 100 for cable shafts

5. Financial summary

Detailed budget and bill of quantity (BoQ) is attached to this document.

a) Original budget BoQ from Tender – attachment no.2

b) DDI Budget and BoQ – attachment no.3

c) Comparative Budget and BoQ DDI-TD – attachment no.4

Financial summary for SO312 Drainage of station:	
Budget items for the proposed solution together:	177 909,05 EUR
Total deductible items:	-156 336,05 EUR
Costs difference	**21 573,14 EUR**
Reasonable profit according to PCC 1.2 (5% of costs difference):	1 078,66 EUR
Total costs for the Variation order no. 16:	**22 651,80 EUR**

6. Completion Date Impact

This variation does not influence overall completion date.

7. Attachments

Attachment no.1 - Construction General designer statement

Attachment no.2 - Original budget BoQ from Tender

Attachment no.3 - DDI Budget and BoQ

Attachment no.4 - Comparative Budget and BoQ DDI-TD

Attachment no.5 – The graphic attachment

Attachment no.6 – Design Documentation for Implementation (DDI) – SO312 Drainage of station

Príloha č.1 / *Attachment No.1*

Stanovisko Generálneho projektanta

Construction General designer statement.

VUJE, a.s.
Okružná 5 • 918 64 Trnava • Slovenská republika

vůje

Ing. Tomáš Bálint
SPIE Elektrovod, a.s.
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VÁŠ LIST ČÍSLO / ZO DŇA	NAŠE ČÍSLO	KÓD CITLIVOSTI[1]	VYBAVUJE / LINKA	DÁTUM
-	17973/2018	3	Ing. Dekýš/0905587318	9.10.2018

VEC
Vyjadrenie generálneho projektanta k zmenovému konaniu č.16 - SO 312 Odvodnenie pre stavbu „Rozvodňa Bystričany -transformácia 400/110kV

Po preštudovaní obdržaných podkladov k zmenovému konaniu č.16 môžeme skonštatovať, že potreba zmien odvodnenia vznikla zmenami riešenia káblových trás v rámci SO 525 Káblové trasy (Zmenové konanie č. 10). Nakoľko navrhované riešenie rešpektuje nový stav káblových trás a zároveň je zachovaná pôvodná funkčnosť objektu, súhlasíme s navrhovanými zmenami.

SUBJECT
Statement of the general designer for the change of procedure no. 16 – SO 312 Drainage for the construction of „Substation Bystričany – transformation 400/110kV"

After reviewing the documents received for the change procedure no. 16 we can state that the need for changes in drainage resulted from changes in cable route solutions within the SO 525 Cable Routes (Change Procedure No. 10). As the proposed solution respects the new state of the cable routes while preserving the original functionality of the object, we agree with the proposed changes.

Ing. Michal Dekýš
Vedúci oddelenia 1240
Head of Unit 1240

TEL: 0905587318 / **EMAIL:** michal.dekys@vuje.sk
IČO: 31450474 / **DIČ:** 2020392539 / **IČ DPH:** SK2020392539
Zapísaná v OR OS Trnava, odd. Sa, vložka č. 164/T
BANKOVÉ SPOJENIE: Tatra banka, a.s., č. ú. 2626004387/1100
IBAN: SK54 1100 0000 0026 2600 4387 / **BIC:** TATRSKBX

Príloha č.2 / *Attachment No.2*

Originálny rozpočet DVZ

Original budget BoQ from Tender

Príloha č.3 / *Attachment No.3*

Rozpočet pre navrhované riešenie DRS

DDI budget and BoQ

Príloha č.4 / *Attachment No.4*

Rozdielový porovnávací rozpočet DRS-DVZ

Comparative Budget and BoQ DDI-TD

Príloha č.5 / *Attachment No.5*

Grafická príloha /
The graphic attachment

Príloha č.6 / *Attachment No.6*

sa nachádza v samostatnej obálke

Dokumentácia pre realizáciu stavby (DRS) – SO312 Odvodnenie rozvodne 400 kV

placed in separate package

Design Documentation for Implementation (DDI) – SO312 Drainage of station

Annex 5 to Amendment No. 3
Contract Price Increase Summary

Annex 5 to Amendment No. 3

Project: Substation Bystričany - transformation 400/110 kV / Rozvodňa 400 kV Bystričany
Substation Horná Ždaňa - enlargement / Rozvodňa 400 kV H. Ždaňa - rozšírenie
Substation Križovany - enlargement / Rozvodňa 400 kV Križovany - rozšírenie

Contract Price Increase Summary

Contract Price as signed	**13 900 104,56 €**
Approved Variations to the Contract, series I as per Annex 2 to Amendment No. 2	**390 542,57 €**
The Contract Price as per Amendment No. 2	**14 290 647,13 €**
Rectified Values of the Approved Variations to the Contract, series I as per Annex 1 to Amendment No. 3 (increase above the determined values in Amendment No. 2)	**620,84 €**
Approved Variations to the Contract, series II as per Annex 3 to Amndment No. 3	**695 021,82 €**
Amendment No. 3 total price increase	**695 642,66 €**
The Contract Price as per Amendment No. 3	**14 986 289,79 €**