

# VÚJE Experience With Large Scale Projects and Their Applicability to the Future of the Slovak Energy System

Presented by  
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## Some of the Most Important Projects of VÚJE

- ü Gradual Reconstruction with safety upgrading of the Bohunice V1 NPP (VVER 440/V230)
- ü Modernization of Bohunice V2 NPP (VVER 440V213)
- ü Completion of the Republic repository of radioactive waste in Mochovce
- ü Decommissioning of the Bohunice A1 NPP
- ü Construction of high voltage line Varín - Sučany

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## Gradual Reconstruction of V1 (VVER 440/V230)

- ü Most important project for VÚJE (1995 – 2000)
- ü Work together with Siemens in consortiumm REKON
- ü VÚJE as general contractor

## Gradual Reconstruction of V1 (VVER 440/V230)

### Main VÚJE task

- ü Detail design documentation
- ü Provision of equipment deliveries
- ü Provision and management of equipment installation
- ü Development of documents
  - Ø Operating procedure
  - Ø Safety documentation
- ü Overall responsibility for coordination for all professions in the field of design, supplies, implementation and commissioning



## General Results of the Gradual Reconstruction

- ü All UJD requirements (Dec. 1/94) were fulfilled
- ü Internationally accepted safety level for V1 (IAEA mission 11/2000)
- ü Good base for safe reliable, economic and ecological operation

## Modernization of V2 (VVER 440/V213) Bohunice

### Main VÚJE task

§ The general designer provides for

- Development of design documentation
- Development of safety documentation
- SW for safety I&C (red. 2-6) preparation

§ Support for General Supplier (SE)

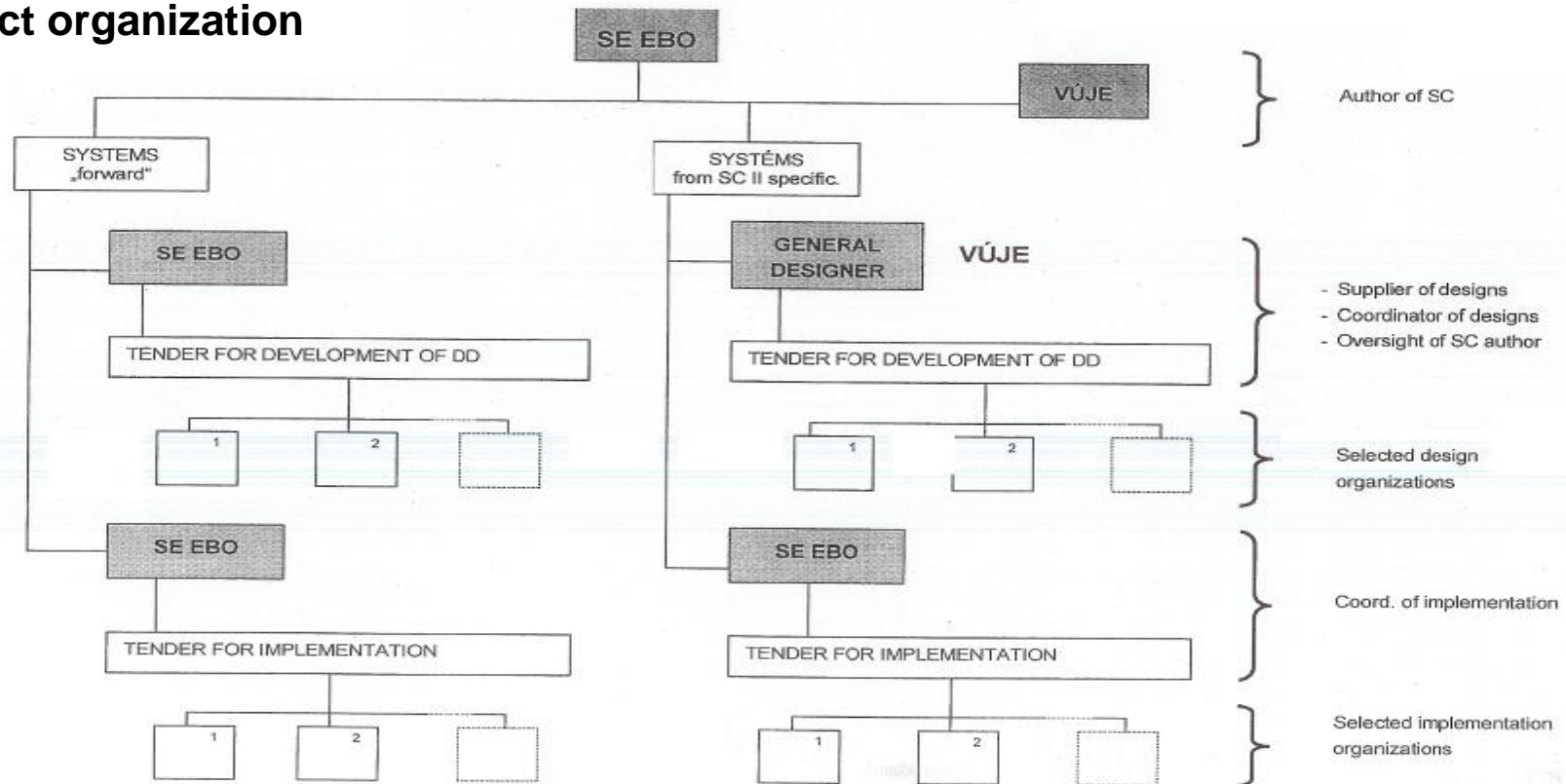
- Development of operating documentation
- Development, implementation and evaluation of programs and tests for equipment commissioning
- Coordination of electro and I&C part

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## MOD V2 Modernization V2 Bohunice, VVER 440/V213

### Project organization



## What was Necessary to Do for Successfully Preparation, Implementation and Commissioning of Such Project?

- § Changing of the VÚJE structure with creation of new decision for new activities
  - Delivery
  - Budget preparation
  -  - QA (VÚJE and subcontracts)
- § Combine the project management with divisional structure management
- § Accommodate to „work style“ of our consortial partner and overcome the language barrier
- § Create the reliable and affective delivery system with subcontractors



## Quality Assurance

**For ensuring the necessary quality level we prepared:**

Ø Project manual

Ø Organization structure

 - Project (Siemens+VÚJE+EBO)

 - VÚJE

Ø Project procedure n.1-8 (No. 1 Changes implementation, ...)

 Ø Project procedure (No. 2 On side organization)

 Ø Communication relation

 Ø Implementation organization

 Ø ECCS organization



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## Project procedure No. 2

Projektová procedúra č. 2

Dokument č.: REKOV1/000/QA/0007/NDBo/Ru

Revízia č.: 2

Strana č.: 1

Výtlačok č.: 1

KONSORTIUM  
**REKON**  
SIEMENS-VUJE

Projektová procedúra č. 2

**Organizácia stavby**

Ev. č.: REKOV1/000/QA/0007/NDBo/Ru

(vykonávací dokument k Projektmanuálu REKOV1/000/QA/0001/NDBo/Ka)

Schválil	SE-EBO	Kerak, 5010	12. 1. 2000	
Odsúhlasil	Siemens-KWU	Kühne, NP-B	11. 01. 2000	
	VÚJE	Ferenc, 0500	05. 01. 2000	
Overil	SE-EBO	Kozina, 5040	12. 1. 2000	
	Siemens-KWU	Ritsche, NW-Q	11. 1. 2000	
	VÚJE	Haberern, 0903	05. 01. 2000	
Autor	VÚJE	Knobloch, 0930	04. 01. 2000	
		Meno/oddelenie	Dátum	Podpis

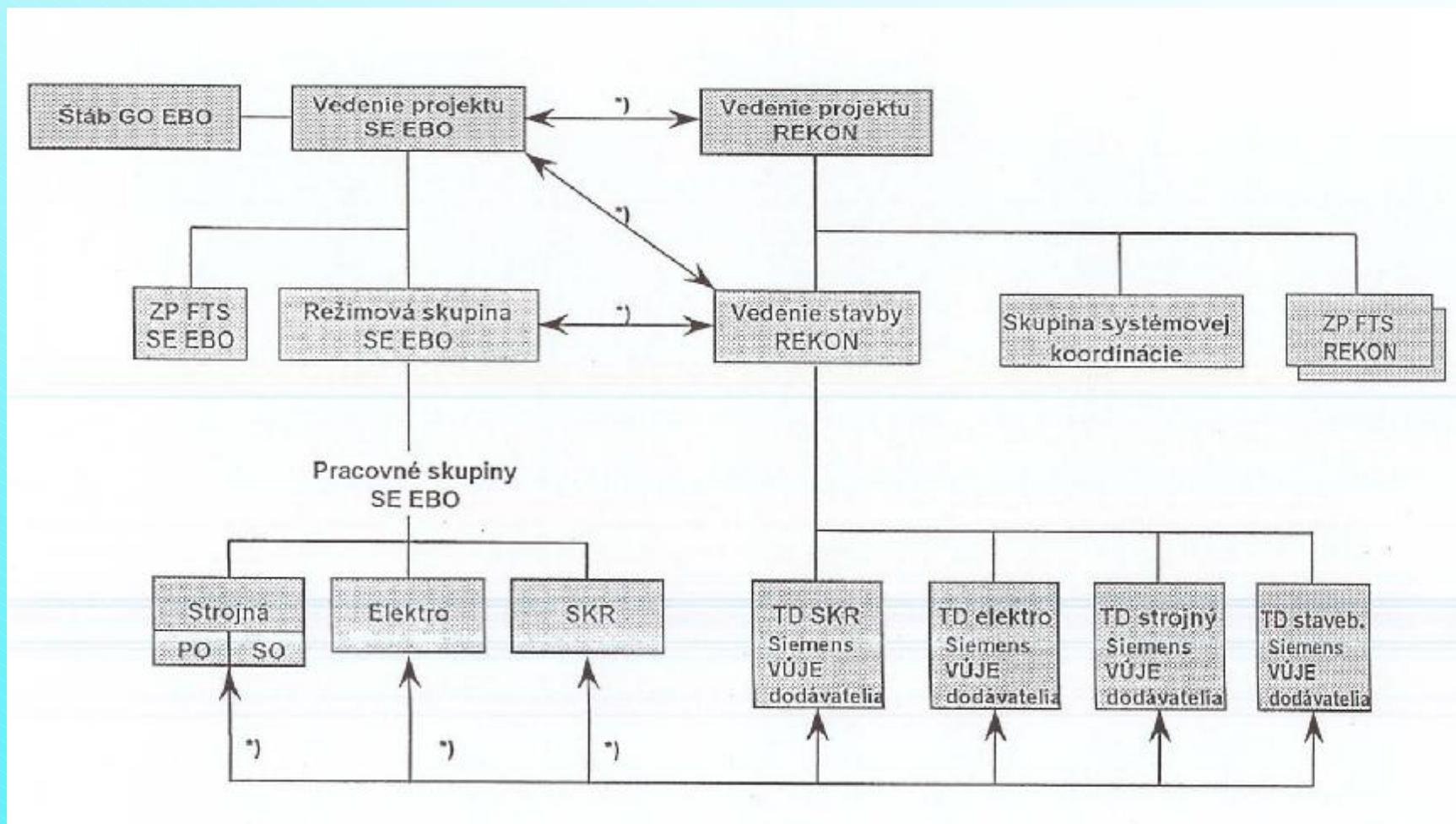
Táto kópia projektovej procedúry je evidovaná: áno - nie



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## Communication relation

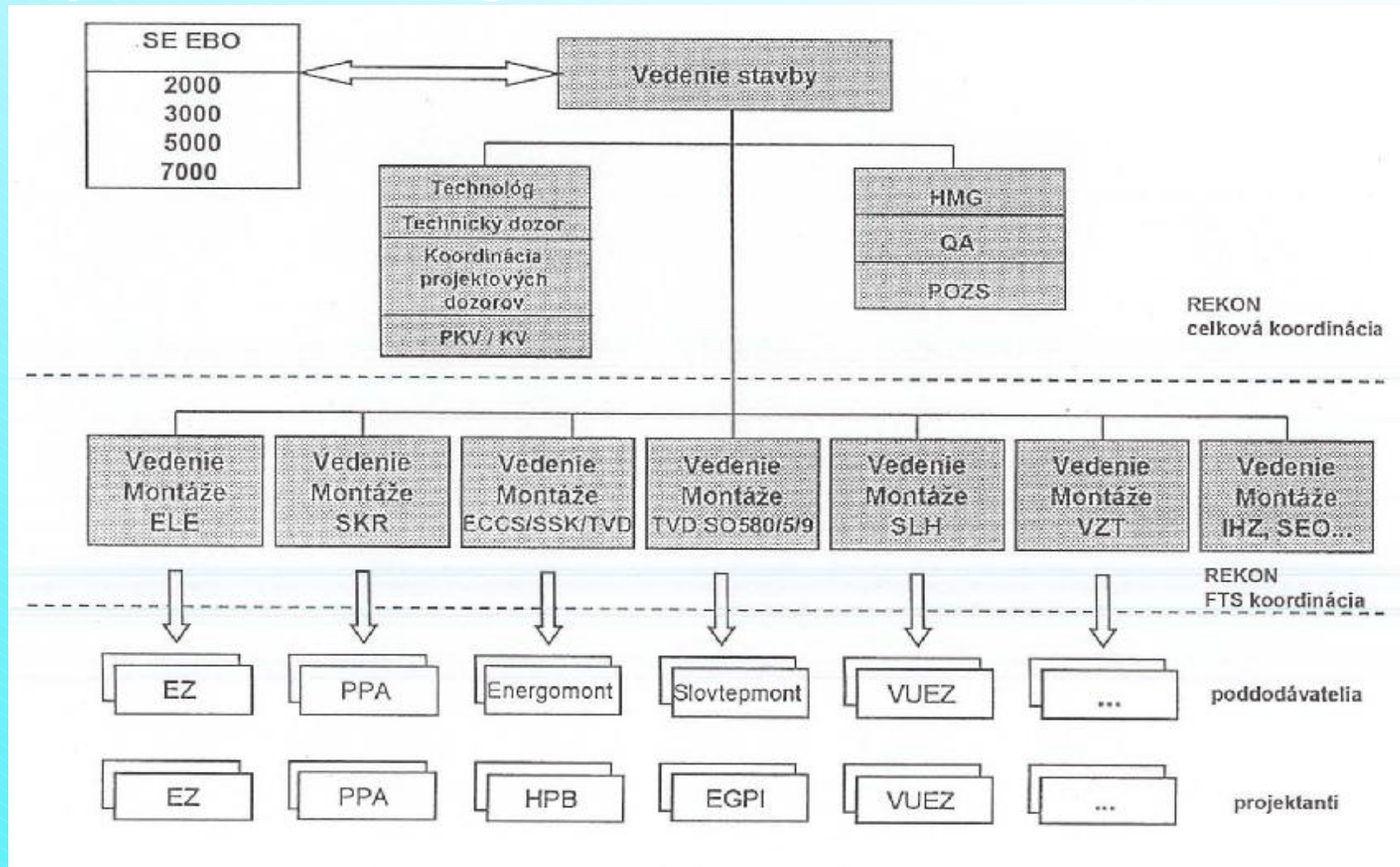




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## Implementation organization

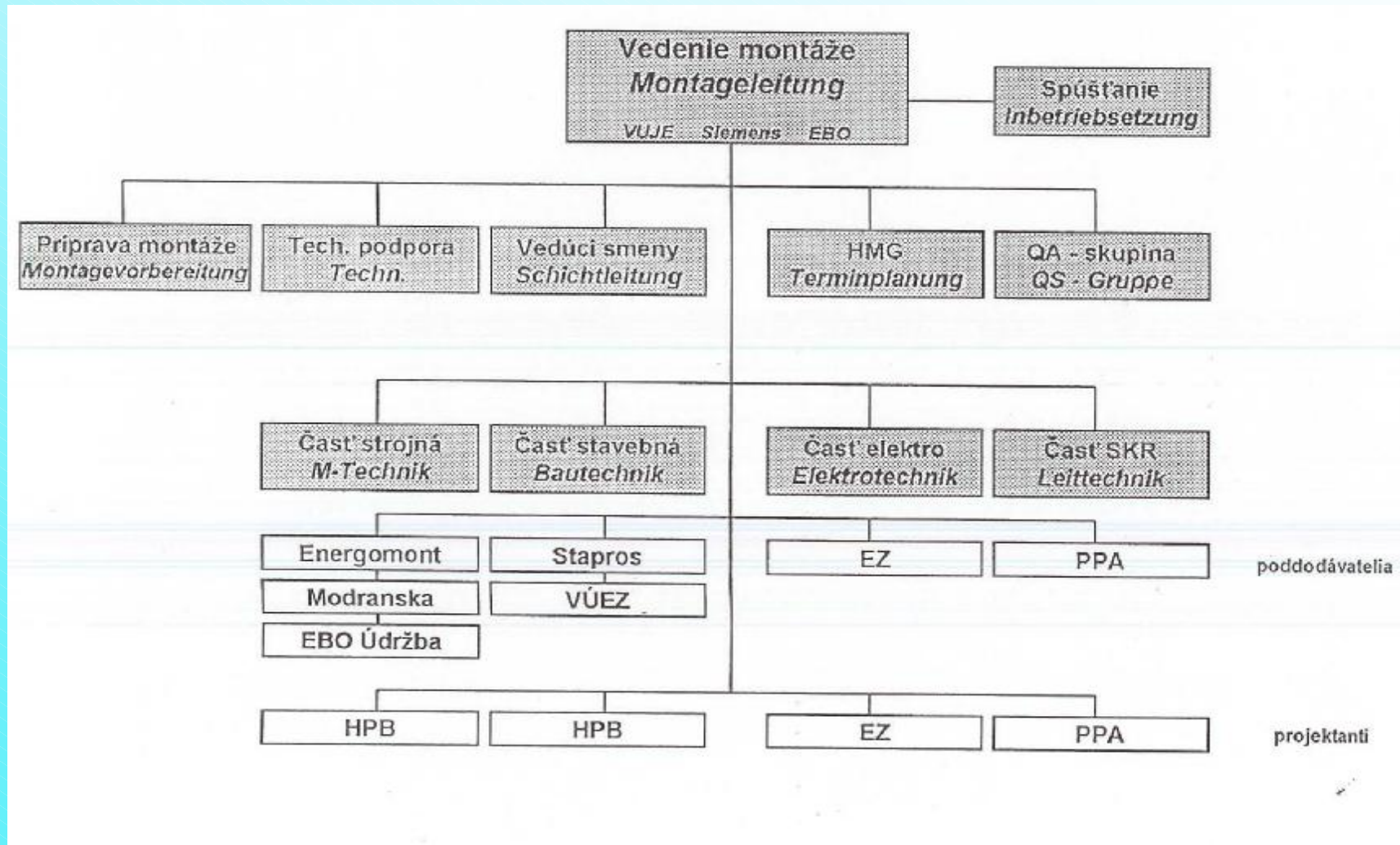




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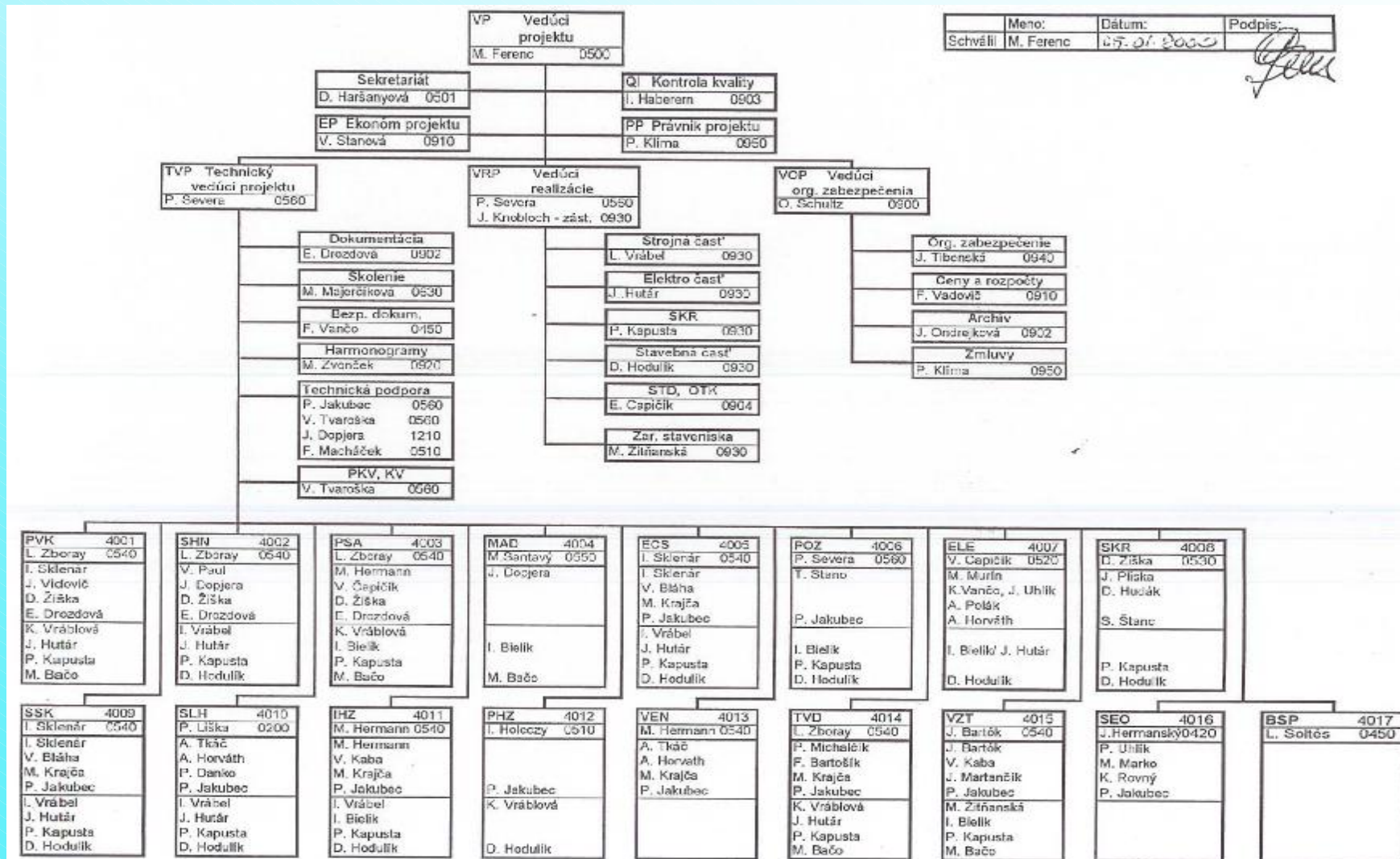
## ECSS organization



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## Organization REKOV1 VÚJE

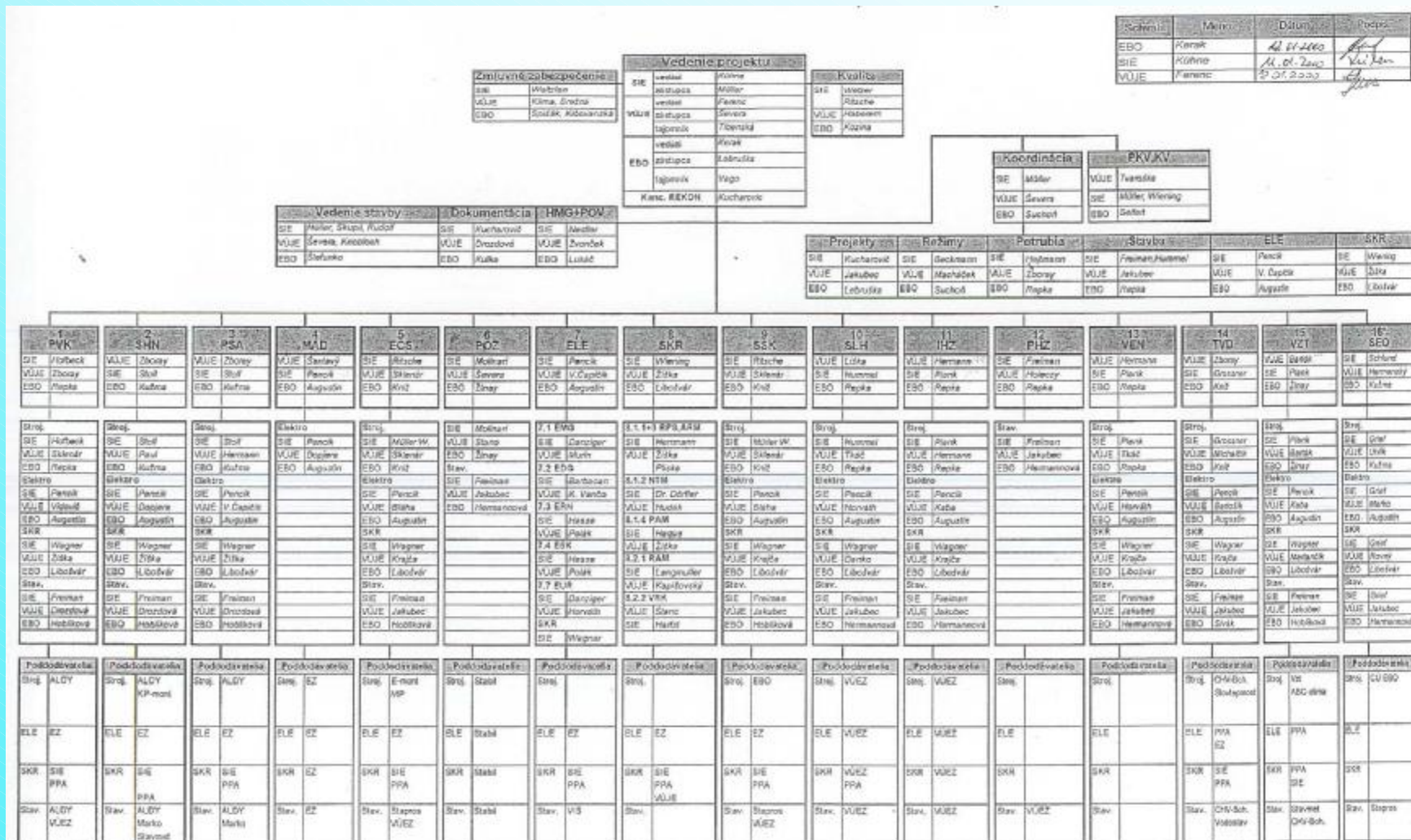




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## Organization structure of REKON



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## Comparison of Reconstruction of V1 and V2 Modernization Projects from VÚJE Side

VÚJE activities	V1	V2
Design documentation	+	+
Safety documentation	+	+
SW for safety I&C	-	+
Operational procedure	+	+
Commissioning	+	+
Delivery	+	-
Implementation	+	-
Training	+	-
Overall coordination of implementation	+	-



## Comparison of Reconstruction of V1 and V2 Modernization project from VÚJE Side

- ü More activities and overall responsibility of VÚJE for V1 Reconstruction
- ü More activities and responsibilities for SE for V2 Modernization project
- ü Implementation during unit outage for both projects
- ü New legislation for tendering the deliveries and implementation phase of V2
- ü Less subcontractors for V2 (for V1 more than 100 subcontractors)  
(for V2 about 30 subcontractors)

## Conclusion

- VÚJE was able and is able to manage large scale project on time with high quality
  - V1 Reconstruction was done
  - V2 Modernization will be finished in 2008
  - Other projects are under way too (A1 Decommissioning...)
- Fulfilment of the project tasks through
  - Changing company structure and/or creating of new department
  - Using technical skilled specialists for project leading
  - Creating of the reliable and efficient delivery model with domestic or foreign companies
  - Using of skilled people for project management