Fig. 2. Late Permian (approx. end of Zechstein) (A), late Triassic (B) and late Jurassic (C) reconstructions (without decompaction), and present-day upper crustal configuration (D) along the regional seismic profile ZRG07. Late Jurassic reconstruction could be regarded only as approximate because of deep erosion within the axial MPT that remove entire Cretaceous and partly Jurassic cover.

Poland. Interpretation of seismic data was focused on identification of potential sub-Zechstein fault zones responsible for MPT's subsidence and inversion. Low quality of seismic data related to strong seismic energy attenuation by the Zechstein evaporates did not allow to directly identify such fault zone. In order to locate them a model of decoupled basin's evolution with regional decoupling level related to the Zechstein evaporates has been adopted. Sub-Zechstein fault zones were located using mainly location of the zones characterised by significant thickness variations of the Mesozoic successions. Reconstructed profiles for end of Zechstein, end of Triassic and (for majority of the profiles) end of Jurassic have been also constructed (Fig. 2) in order to visualise role of the sub-Zechstein fault zones. Correlation of identified fault zones with gravity and magnetic data (Fig. 2) proved that NE MPT's boundary in Mesozoic times was strictly controlled by the EEC's SW margin defined by potential fields.

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Hydrothermal Mineralization in the Moravian Karst near Býčí Skála Cave: Post-Variscan Deformation History?

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Geological structure of the western central part of the Moravian Karst originated mainly during two different deformation processes: late Variscan oblique stacking of thrust units and Paleogene faulting of the Carpathian foreland. The above scheme of deformation can be followed by different stages of hydrothermal mineralization (Češková, 1978; Slobodník, 2002).

Detailed study of the natural gamma-ray and magnetic-susceptibility section of Josefov–Bárová (JOBA, M. Geršl – J. Hladil, a study in progress) unveiled the presence of calcite veinlets with sulphide mineralization also in well-bedded and low-deformed *Amphipora* banks of Early to Middle Givetian age. These scarce veinlets less than 5 cm thick are bedding-parallel, following opened sutures on bedding planes. Natural gamma-ray and magnetic-susceptibility values for the veinlets are lower that average values for the Devonian limestone and do not modify the stratigraphical patterns (low mineralization, presence of limonite-goethite, absence of siderite). Calcite veinlets of JOBA are similar to the NW–SE-striking veins in their neighbourhood (0.8 m thick calcite vein in the Býčí skála Cave, or veinlets of Josefov–Pila; Češková, 1978).

The bedding-parallel main veinlet (10 m above the base of the 100 m JOBA Section) is present in the Givetian limestone. Two other systems of jointing correspond to (1) the main N–S-striking cleavage planes (N–S to NNE–SSW/65–80°W) and (2) the W–E-striking, subvertical, fault-parallel cleavage planes.

The main (subhorizontal) veinlet (type 1) in JOBA (NNE–SSW/20–30°E) is usually 0.2 to 2 cm thick. Hydrothermal calcite aggregates show fine-grained gouges on both lower and upper faces of the veinlet. Although it is a tensional joint, these faces were deformed by shearing (also with "tectonic clay" and "micro-breccia" in places). The bedding-parallel translation was of small magnitude, and the kinematic indicators suggest the top-to-the-south movement. Hydrothermal calcite contains 0.45–0.70 wt.% MgO, <0.02 % FeO and <0.05 % MnO; quartz aggregates with chips of carbonates are rare. The **transverse calcite veinlets (type 2)** (N–S to NNE–SSW/70–85°W) are usually 0.3 to 1.5 cm thick. Coarse and undeformed calcite crystal fabrics prevail. This calcite contains 0.30−0.75 % MgO and less than 0.10 % FeO and 0.10 % MnO. Compared to the previous veinlet, Fe and Mn concentrations are somewhat higher. The **superimposed system of veinlets (type 3)** is possibly the youngest (cross-cutting of veinlets). A representative veinlet of this type is 1.5 cm thick, striking W–E, dipping steeply (87°) to the south. Such orientation closely corresponds to planar rock faces (joints to faults) of the cliffs of Bárová, Krkavčí and Býčí skála. This type-3 veinlet differs from the previous generations in the presence of tiny inclusions of galena (~5 µm) and barite (~10 µm), as well as in higher Fe and Mn concentrations in hydrothermal calcite (0.44 % MgO, 0.43 % FeO, 0.19 % MnO).

A weak mineralization with a similar mineral assemblage (galena), associated with increased Mg-Fe-Mn contents in calcite, was found also in other limestone quarries of the Moravian Karst by Slobodník (2002), for instance, in the Mokrá and Skalka quarries. **The type-3 JOBA veinlets** correspond to "F-type" veins reported by Slobodník and Muchez (1998). The latter have also typically increased concentrations of Mg, Fe and Mn (~0.4 % MgO, 0.4 % FeO and 0.2 % MnO) and relatively abundant sulphide inclusions (mainly galena) . This similarity together with low temperatures (<80 °C) indicated by fluid inclusions and oxygen-isotope compositions of these "galena" calcite veins from Mokrá (P. Dobeš, J. Hladíková and J. Hladil, 1994, unpublished) suggest that the type-3 JOBA veinlets are also very young, possibl y Paleogene (surely post-Turonian and pre-Badenian) in age.

Josefov lies in the continuation of the southern Blansko Half-Graben faults, where relicts of Cretaceous sediments lie between the Brno massif and the Moravian Karst. Formation of the second generation of these veins was probably coeval with that of metasomatic rims along normal faults in the entrance chamber of the Býčí skála Cave (Hladil, 1983; Blansko Half-Graben); the third generation of veins is even younger. The post-Variscan normal and bedding-parallel faulting occurred with the top-to-the-east and top-to-the-south vergency in the eastern and southern neighbourhood of the Josefov road junction.

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Seismotectonic Model for Probabilistic Seismic Hazard Assessment of Critical Facilities in Western Slovakia

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Probabilistic seismic hazard assessment for critical facilities (e.g, nuclear power plants) requires collecting all relevant seismological, geological and geophysical data in the regional (up to 150 km from the site), near regional (up to 30-40 km from the site) and site vicinity (up to 5 km from the site) scales, respectively. All collected data should be used in the seismotectonic model. Seismotectonic model should define geographical borders of active source zones, magnitude-frequency relationships and estimates of minimum and maximum magnitudes.

We undertook a comprehensive study of the geology, seismicity and seismic zoning for the Bohunice nuclear power plant site (BNPP).