

# Sarcophagus in Chernobyl

## Stabilisation of existing sarcophagus over devastated block 4 MAURER MSM® spherical bearings



### Figures and Facts

**Location:** Chernobyl / Ukraine  
**Owner:** Nuclear Power Plant Chernobyl  
**Contractor:** Pivdentplomontazh Inc.  
**Design:** Energoprojekt Kiev

**Total investment costs:**  
approx. 3 billion US \$ for the new concept incl. all costs for erection of a new confinement shell, demolition and deposit of the existing nuclear fuel rods and structural remains.

### Involvement of Maurer Söhne

8 nos. **Maurer MSM® spherical bearings** type KGE 1750 kN with a displacement capacity of  $\pm 150$ mm to support the stabilising steel truss structure, supporting the roof of the sarcophagus.



The present rehabilitation procedures, part of the new protection concept for the damaged block, are financed via the East European Bank in London, consist of three construction phases:

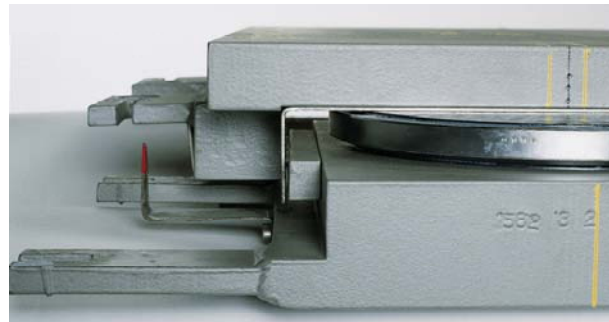
1. Stabilisation of the old sarcophagus, erected in 1986 immediately after the disaster, in order to prevent both, walls and roof construction from crashing and as a consequence avoid escape and spreading of the radiating dust.
2. Building a new confinement shell around the existing sarcophagus.
3. Dismantling and durable storage of all remainders of the contaminated materials and structures under protection of the new confinement shell.

Phase 1 is now under execution. After being faced with stability problems of a supporting wall, it was decided to relieve the same by erecting steel truss towers with supporting beams, supported on consoles.

The required bearings supporting the beams have to fulfil the following demands:

- Bearings have to be able to withstand high permanent radioactive radiation.
- Friction values in the bearings must be guaranteed to remain below 3 % for the whole lifetime in order to keep the horizontal loads on the support shafts as little as possible.
- Lifetime of the bearings shall correspond to the lifetime of the building structure.

As the MAURER MSM<sup>®</sup> Spherical Bearings are the only ones available in the world market meeting all requirements, the design office in charge (Energoprojekt Kiev) demanded this type of bearings to be used during the execution of the works.



MAURER MSM<sup>®</sup> spherical bearing KGE 1750 kN