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## Chornobyl Shelter Stabilization and New Safe Confinement

**Bechtel leads an integrated international team undertaking a complex, high-hazard project to safely confine the reactor in Chornobyl, Ukraine that was damaged in 1986 in one of history's worst nuclear disasters.**

Within 6 months of the accident, Soviet teams were able to contain the damaged reactor under a temporary shelter called a sarcophagus. Most of the sarcophagus was not secured to the damaged underlying structure, leaving it vulnerable to earthquakes, rainwater, and normal settling.

Following short-term stabilization of the sarcophagus, the Bechtel-led team, which also includes Battelle Memorial Institute, designed the New Safe Confinement (NSC) structure to enclose the damaged unit. Construction by a French consortium is under way and has a scheduled completion of 2017.

Part of the overall Shelter Implementation Plan, the NSC has been designed to keep water out and dust in for at least 100 years. The more than 33,000-ton NSC (including all internal components) is one of the largest moveable structures ever built. Key facts:

### Highlights

- **Location:**  
Chornobyl, Ukraine
- **Customer:**  
European Bank for Reconstruction and Development, Ukraine  
Chornobyl Nuclear Power Plant
- **Duration:**  
1998–2017
- **Contract value:**  
\$250 million

- Arch-shaped, roughly 32 stories tall, and wider than two football fields at its base
- Built on skids adjacent to the sarcophagus to minimize radiation exposure to workers, the structure will be slid into place over the contaminated site and sealed at both ends
- Provides a confined space within which unstable portions of the sarcophagus can be deconstructed, and the remaining highly radioactive material can be removed for transport to a long-term storage repository

### Key Components



#### NSC construction

The steel arch enclosure will be the largest moveable structure ever built. Once completed, a Ukrainian cleanup team will robotically dismantle the sarcophagus and reactor for storage. Bechtel has multiple customers on this project, and must meet the expectations of numerous government agencies and international regulatory authorities.



#### Monitors facilitate lifts at site

Monitors sit atop 40 lifting towers at the NSC site. Together, the monitor and lifting tower is called a “strand jack,” which is used to lift each section of the arch as it is completed. The monitors provide an on-screen visual of the entire process, enabling a closeup view of the arch so that the lift operator may supervise the operation.