NERIS

Presentation of the Institute for Safety Problems of Nuclear Power Plants (ISP, Ukraine) and the Chernobyl Radiation and Ecological Biosphere Reserve

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INSTITUTE FOR SAFETY PROBLEMS OF NUCLER POWER PLANTS
and
CHORNOBYL RADIATION AND ECOLOGICAL BIOSPHERE RESERVE

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ISP NPP

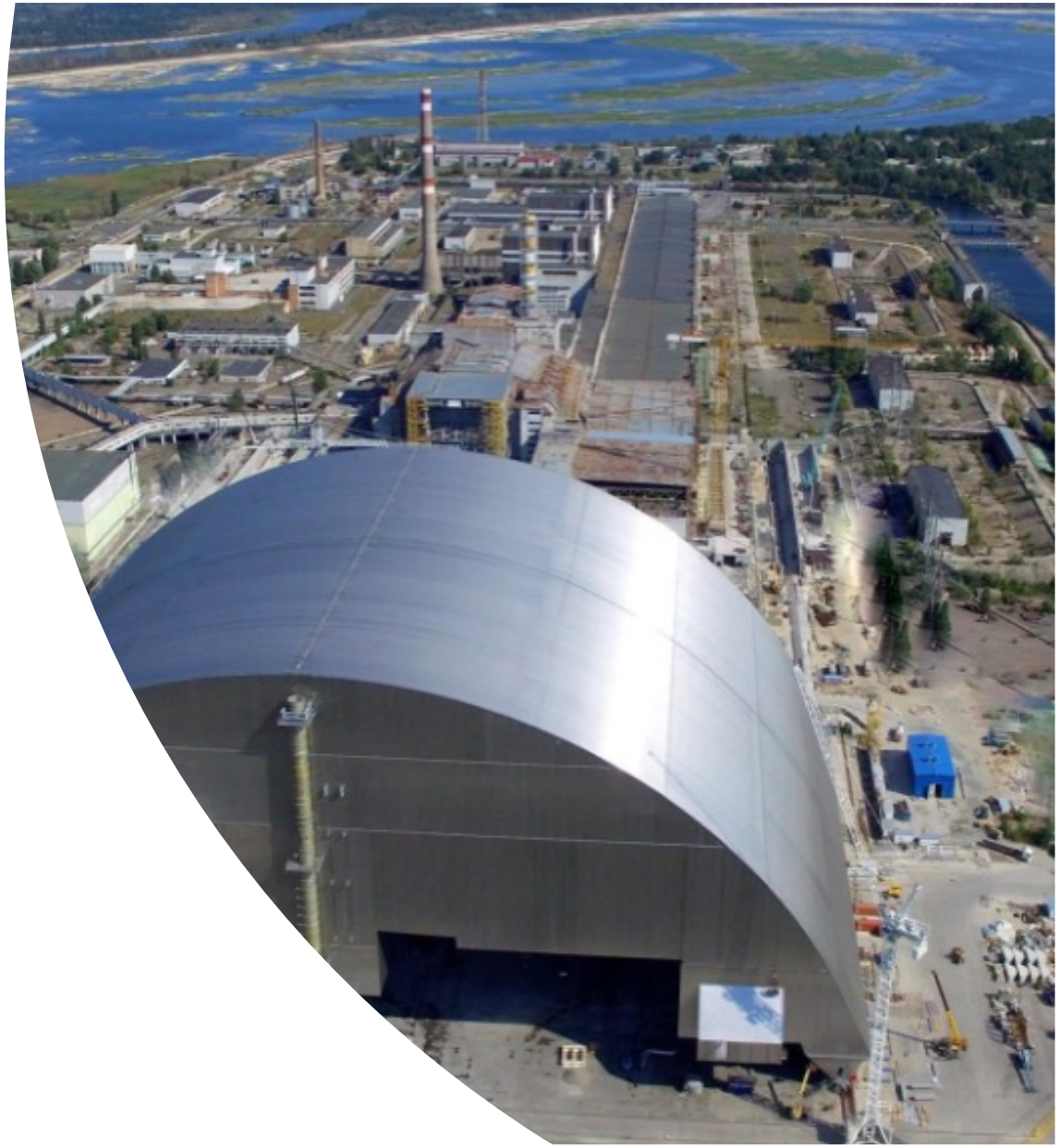
INSTITUTE FOR SAFETY PROBLEMS OF NUCLER POWER PLANTS

NATIONAL ACADEMY OF SCIENCE UKRAINE

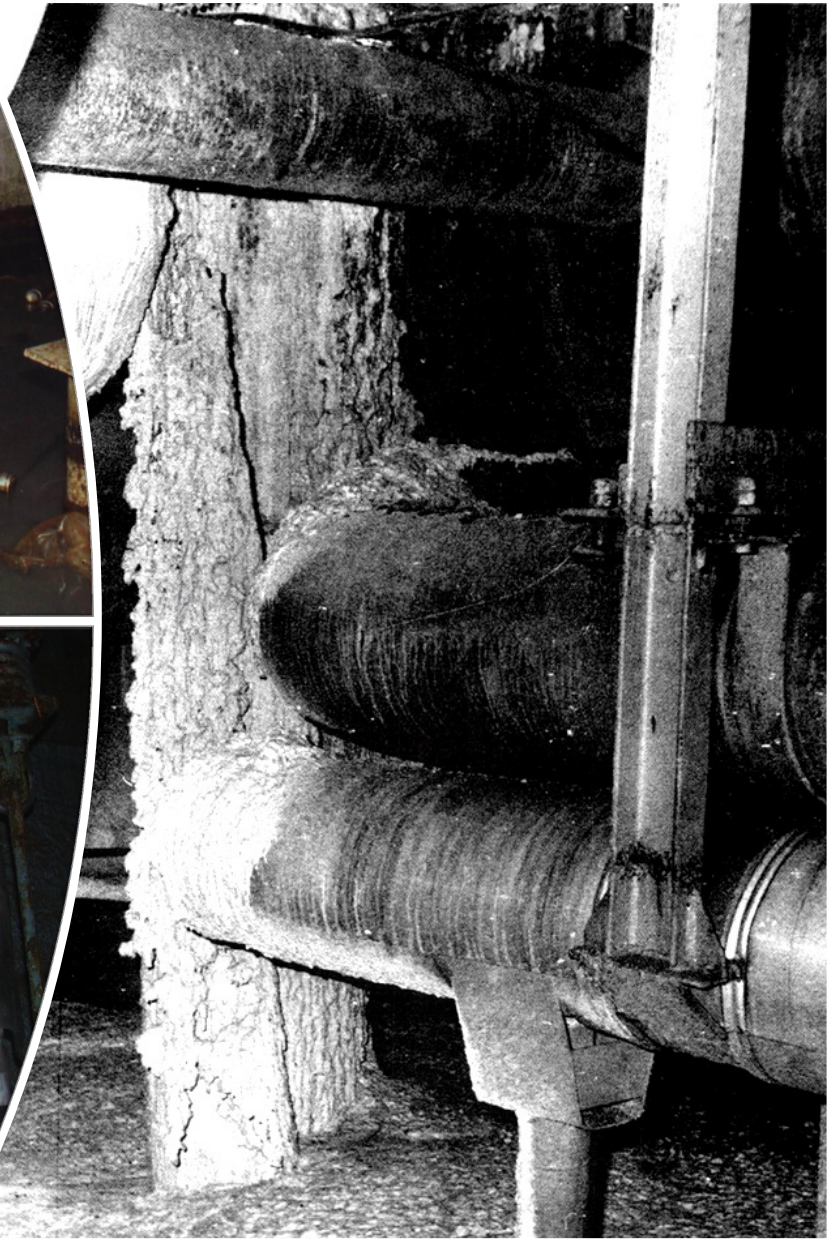
ISP NPP is the organization – scientific supervisor of Chornobyl NPP

We contributed to construction of the New Safe Confinement

- Conducting of pre-design research;
- Investigation of the condition:
  - Nuclear materials,
  - accumulation of water masses,
  - environmental air,
  - nuclear and radiation safety,
  - building structures;
- Designing of the safety system;
- Development of the NSC conceptual design;
- Participation in the NSC designing;
- Providing monitoring of the nuclear and radiation safety at all stages of the NSC construction.



We investigate the lava-like fuel containing materials



We provide radioecological monitoring of the NSC: environmental impact, including radioactive aerosols inside the NSC.

We developed the design to stabilize of unstable structures of the Shelter Object (the old Sarcophagus, now hidden under the NSC)

ROBOTICS

We have been designing robotics to study the Shelter for 30 years (since 1992).

Radiation safety assessment on the Central Storage Facility for Spent Nuclear Fuel and Spent Nuclear Fuel Dry Storage Facility (ISF-2)

The CSFSF is a ground-based dry spent fuel storage facility of the container type. The CSFSF is designed to store SNFs for 100 years.
The CSFSF project uses SNF storage technology from Holtec International.

The Interim Spent Nuclear Fuel Dry Storage Facility – is the facility designed for acceptance, preparation for storage and storage of Spent Fuel Assemblies and Additional Absorbers, currently stored at Chornobyl NPP.
ISP NPP developed Environment Impact Assessment Report

The programme of Scientific and Technical Support at the stage of construction and commissioning of Central Spent Fuel Storage Facility

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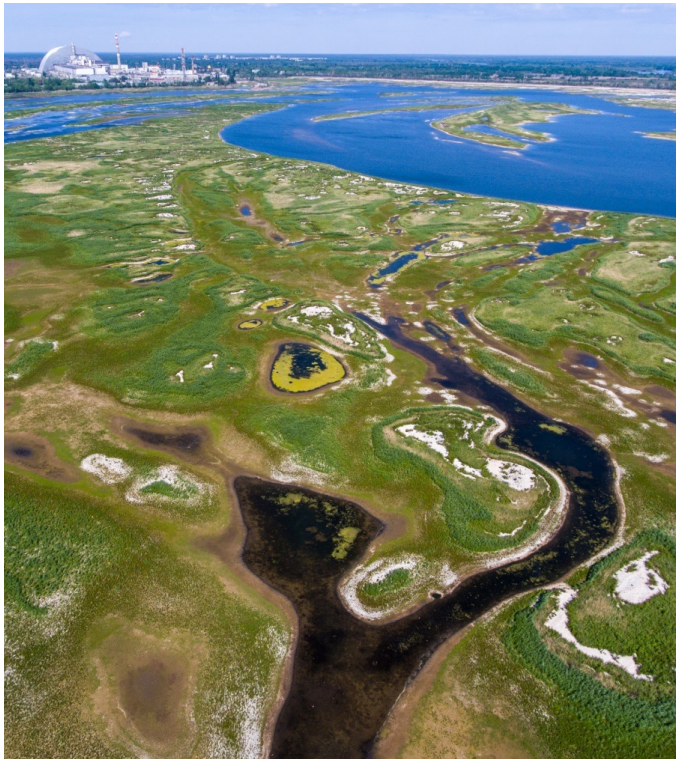
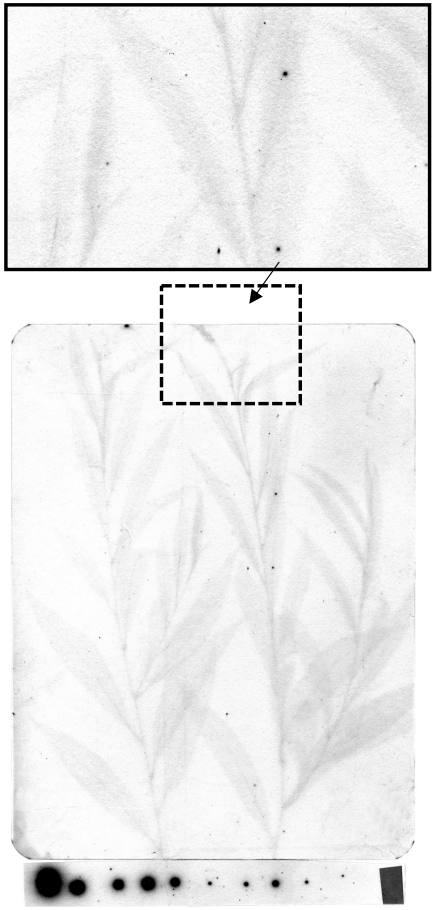
We substantiate the effectiveness of the protective properties of the container.

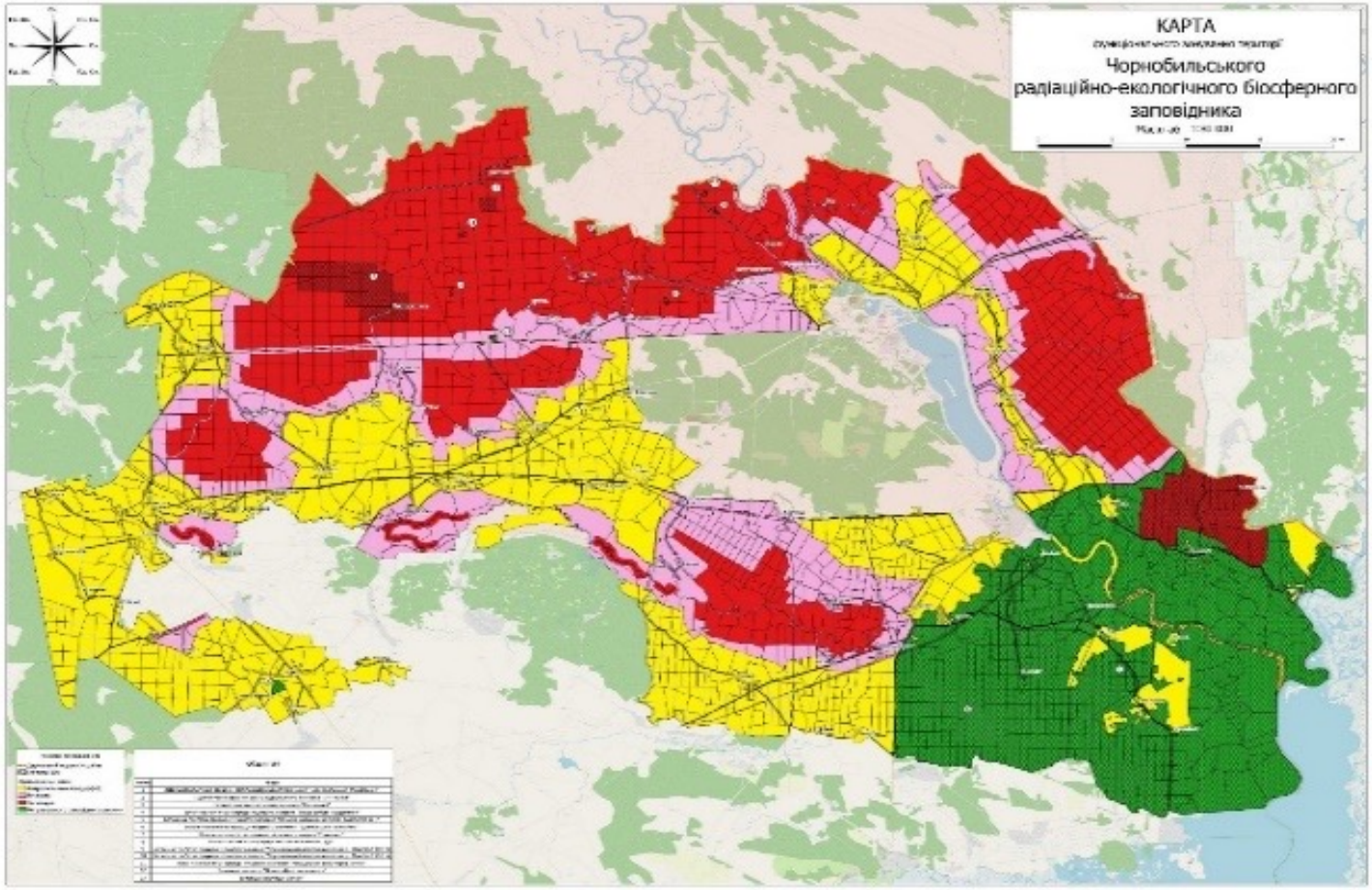


Decommissioning of the cooling lake of the Chernobyl NPP

Investigation of transfer of highly active fuel particles from soil and sedimentation on vegetation

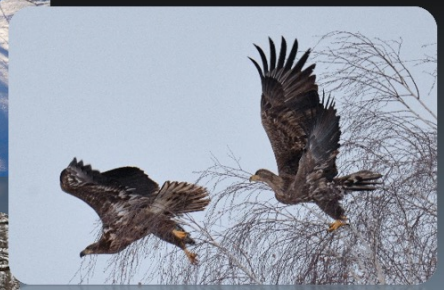


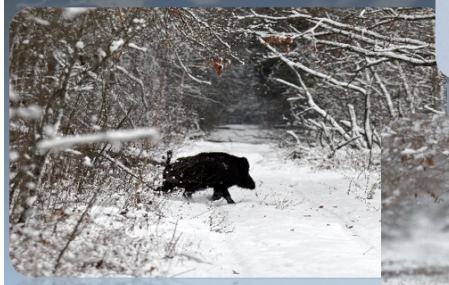
CHORNOBYL RADIATION-ECOLOGICAL BIOSPHERE RESERVE



CHORNOBYL RADIATION-ECOLOGICAL BIOSPHERE RESERVE: UNIQUE AND VALUES

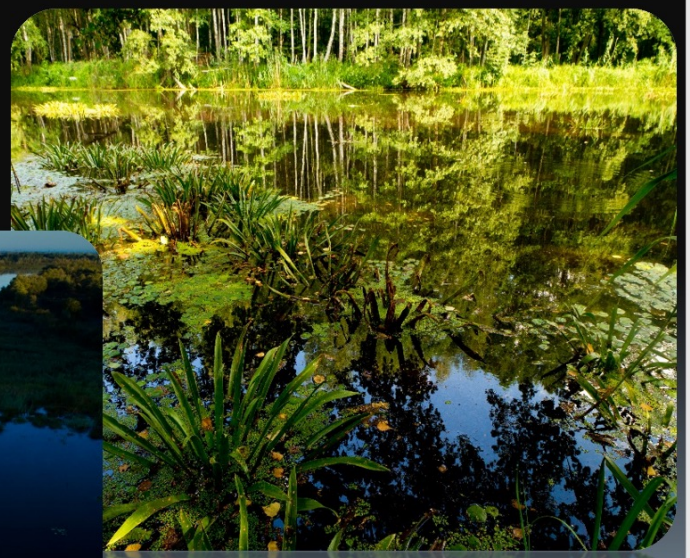
Biodiversity - more than 300 species of vertebrates (with a total of 410 found in the region) have been recorded, of which 75 species (out of 97 possible) are listed in the Red Data Book of Ukraine.





European Five

Wetlands - Submitted for inclusion in the list of Ramsar Convention



Charred ruins on radiation-contaminated territories - unique experimental sites for scientific research

Chornobyl radiation and ecological biosphere reserve

Status: biosphere reserve

Established: 26 April 2016

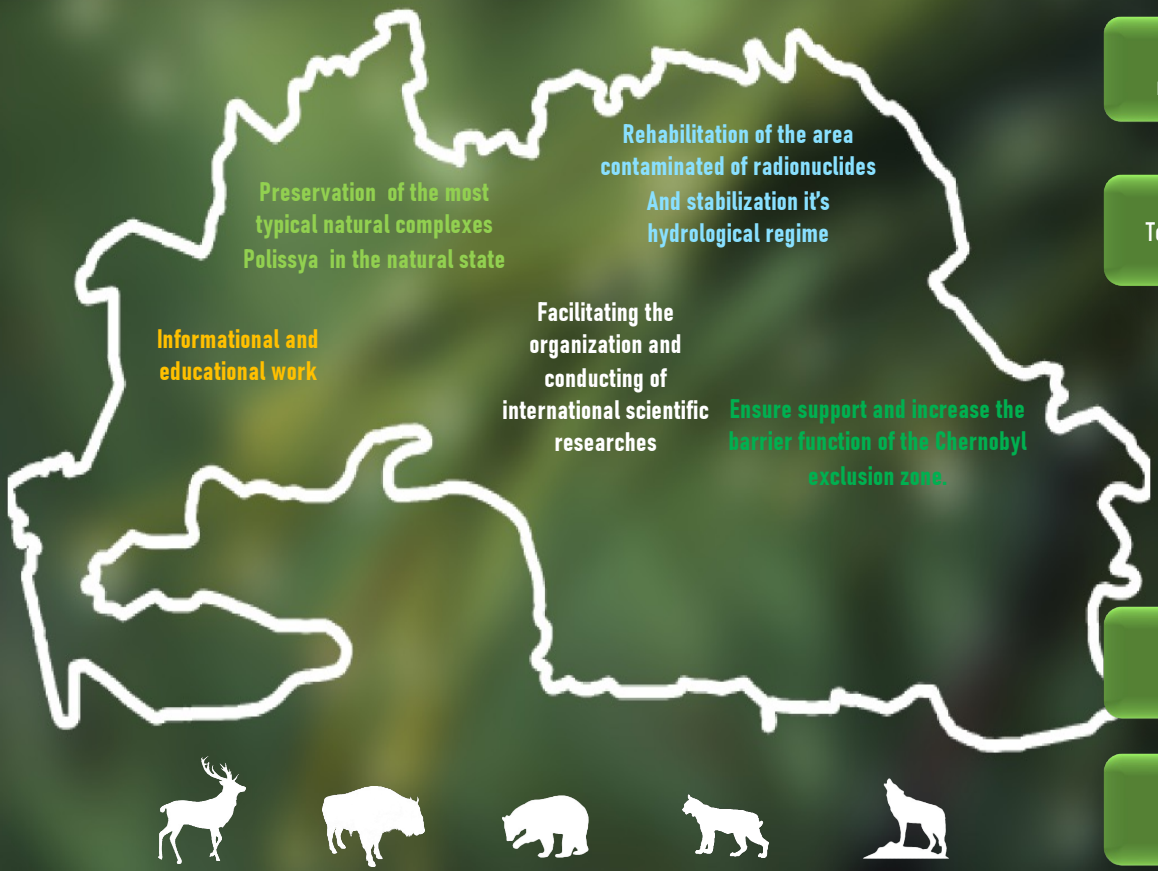
Square : 227 thousand hectares

Perimeter length: 441 km including 154 km of border area

Value of the protected area to the total : 20%, 13 objects of Nature Reserve Fund

Flora: more 1200 of higher vascular plant species, 61 species included to Red Book of Ukraine and International List for Conservation of Nature

Fauna: more 300 species , 66 species included to Red Book of Ukraine and International List for Conservation of Nature



- Management of the territory of the Reserve
- Scientific and research activity
- Territory protection
- International cooperation
- Environmental edication

Perspective directions of develop

- Improvement of the territory management taking into account the special status of the exclusion zone
- Optimization and strengthening of protection regime of the territory and natural objects of the Preserve
- Launch of laboratory and expeditionary platform for international research
- Implementation of innovative technologies to support and enhance of the barrier function of the Reserve
- Establishment of cooperation with scientific, research and educational institutions
- Visualization of Reserve's territory in Internet (GIS and VR based technologies)

THANK YOU FOR ATTENTION!