

Chornobyl accident – the day that changed Ukraine

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26.04.2011

Embassy of Ukraine in Norway

Picturesque Ukraine



Kyiv



Crimea



Lviv



Carpathians



26th of April, 1986: Explosion of Reactor 4 of ChNPP



Фото Укрінформу

26.04.2011

Chornobyl Tragedy to last many tens of years



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Human Suffering and Casualties

- 200 000 evacuated from the 30km exclusion zone
- 3 mln suffered exposure to radiation, 1/3 of them are children



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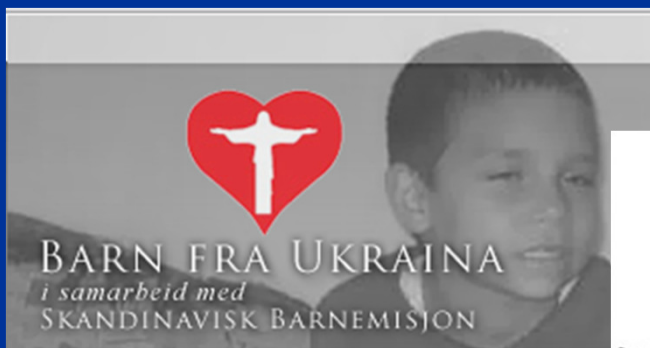


- 7.000 "liquidators" died by 2011 (total number of liquidators - 600.000, from the whole USSR)
- 165.000 are handicapped



Children of Chornobyl

- Cancer (danger rising after 15 years after radiation exposure), Down Syndrome, poor immune system, heart and other diseases
- Inborn handicapcy caused by radiation exposure
- Higher mortality level
- Cuba Programme for Children

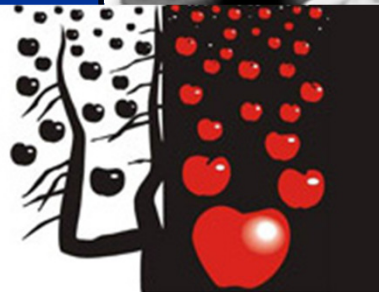


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(Norwegian NGO)



Фонд Допомоги і Розвитку
ДІТЯМ ЧОРНОБИЛЯ





Environmental Consequences

- Radiation level: 30,000 Roentgens per hour at reactor 4 (lethal dose – 500 for 5 hours)
- Contamination of Pripyat River, which feeds into the Dnipro River reservoir system
- «Red Forest» around towns of Chornobyl and Pripyat: a pine dies at a dose twice lower than a fatal dose for a man
- 5 mln ga of agricultural land out of use due to radiation

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RECOVERY MEASURES

Milestones 1986-2011

- **1986** : Mass Evacuation from the 30km zone. Construction of sarcophagus as a temporary measure.
- **1987**: Establishment of the Chernobyl Shelter Fund (CSF), EBRD
- **1995**: EBRD Nuclear Safety Account extended to include the decommissioning of Chernobyl reactors 1-3.
- **1997**: G7/EU and Ukraine agreement on the Shelter Implementation Plan (SIP).
- **1998-99**: Repair of beams supporting the roof and stabilisation of ventilation stack of the sarcophagus.
- **2001**: Decision on the design of the New Safe Confinement (NSC).
- **2007**: 80 % of roof load of Chernobyl Shelter to external support structure.
- **---2014**: Commissioning of the New Confinement and the Waste Fuel Storage.



Economic Cost

- 5%GDP spent annually to fight Chornobyl consequences



- European Commission – largest contributor

- Bilateral Contributions by EU countries, Switzerland, Norway, Iceland, Israel, Kuwait, South Korea, Ukraine etc.

- G8



- EBRD Funds

- Lacking Funds (by 2014):
740 mln EURO



Recovery Projects 1997-2014

Shelter Implementation Project (SIP)

- Site infrastructure projects
- Stabilization of the Shelter
- Construction of the New Safe Confinement (NSF)

**Total Estimated
Value: 1.54 bln €**

- Interim Spent Fuel Storage Facility
- Liquid Radwaste Treatment Plant

**Total Estimated
Value: 300 mln €**

Chernobyl Shelter Fund

Established in 1997 as an multinational donor fund to finance the SIP, administered by the EBRD.

Nuclear Safety Account

Established in 1993 at the EBRD to finance nuclear safety measures in Eastern Europe. Today the NSA finances two decommissioning facilities at Chernobyl.



New Safe Confinement

The construction of the **New Safe Confinement (NSC)** is an unparalleled project in the history of engineering. With a height of more than 100 metres it would be big enough to house the Statue of Liberty. The new structure will be assembled on site, but away from the highly radioactive unit 4 and then slid in place, covering the remains of the reactor building and the old shelter.

- The contract for design and construction was signed in 2007 with the consortium Novarka.
- Work on the detailed design of cranes, fire protection, ventilation etc is completed. Piling of the foundations and lifting cranes started in 2010.

- Final structure will cover unit 4 of ChNPP and Shelter object for at least 100 years





Interim Spent Fuel Storage Facility

Interim Spent Fuel Storage Facility 2

A key facility for the decommissioning of units 1-3 which will provide safe and secure storage of the spent nuclear fuel generated during the operation of Chernobyl powerplant. Design of the facility was approved in October 2010.

- Designed approved in 2007.
- On-going construction.
- The Project is to be completed by 2014.

- Spent fuel is currently stored at the site in an interim wet storage facility constructed in Soviet times.
- The Interim Storage Facility 2 will provide dry storage for spent fuel for min. 100 years

Interim Spent Fuel Storage Facility 2



RESPONSIBILITY FOR THE FUTURE



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Thank you!

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