

* Chernobyl - 30 years later



- * The Chernobyl nuclear accident occurred in 26th of April 1986, in the area of current Ukraine, former Soviet Union.



Alert 1,000 miles away in Sweden after Moscow admits casualties

Huge nuclear leak at Soviet plant

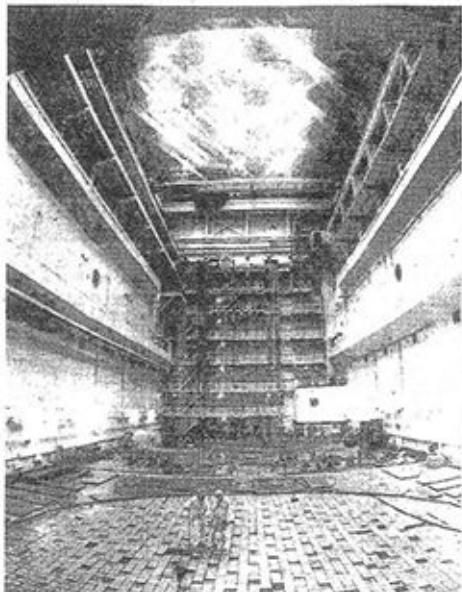
By Thomson Prentice, Science Correspondent, and Christopher Mosey, Stockholm

A massive radioactive leak at a Soviet nuclear power station has caused casualties in what may be the world's worst nuclear accident. The leak was so large that it prompted a full-scale alarm nearly 1,000 miles away in Sweden, including the evacuation of 600 workers from a Swedish power station on the Baltic coast.

Finland reported radiation levels six times higher than normal. Denmark five times higher than normal, and Norway 50% up as a result of the accident. "We have reported radiation just about everywhere where we have looked," said Mr. Ragnar Hope, of the Swedish Radiation Institute.

Some Swedish nuclear experts said they believed the Soviet accident was caused by the overheating of nuclear fuel. A "considerable explosion" would be the result of such overheating and could have led to a "meltdown" of the nuclear core of the reactor, they said.

The Swedish Energy Minister, Mrs. Birgitta Dahl, said all workers there. After the evacuation radiation levels were checked at other areas of the country, including the capital.



Workers at the damaged reactor in Forsmark, Sweden, after a massive radioactive leak.

MANHATTAN * * * SPORTS FINAL
DAILY NEWS
NEW YORK'S PICTURE NEWSPAPER
Wednesday, April 30, 1986

FIRE RAGES, CLOUD SPREADS

THOUSANDS FLEE NUCLEAR NIGHTMARE

said the (covered) ben rare miles. In some 30 villages, their names listed from S...

Help us, USSR pleads
Death toll uncertain
Europe fears fallout
SEVEN PAGES OF IN-DEPTH COVERAGE BEGIN ON PAGE 2

local population at Forsmark. It would not be a danger to human beings, although regional specialists said the level was twice as high in Finland as in Sweden and Norway.

A millirem is a unit of ionizing radiation that gives the same biological effect as one thousandth of a standard unit of X-rays.

The News and Observer

Raleigh, N.C. Wednesday, April 30, 1986

Soviets battle nuclear disaster
USSR pleads for help fighting fire in core; settlements evacuated

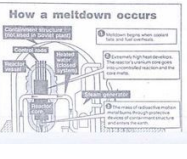
Fire out of control, U.S. officials say

any event, intelligence officials say, pouring water on the fire would result in a burst of radiation.



Scientists at Finland's National Institute of Radiation Protection in Helsinki check air samples.

Casualties may be felt for weeks, generations



By ROBERT M. SCHNEIDER JR.
The type of radioactive exposure that is most likely to cause cancer is the kind that comes from the fallout of a nuclear accident.

SOVIET PLANT SPEWS ATOMIC CLOUD

NUCLEAR DISASTER

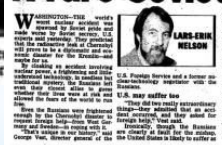
Western officials fear high death toll



Workers at the damaged reactor in Forsmark, Sweden, after a massive radioactive leak.

A rare Soviet cry for help

WASHINGTON—The world's first nuclear power plant to be built in the Soviet Union is now in a dire state of emergency, U.S. officials say.



From the inevitable radioactive cloud plume process. The accident could be as serious as the Japanese nuclear disaster in 1979.

OUR DIRTY SECRET
Like Soviet, Wash. plant lacks safety shell

By MICHAEL J. FINEGAN
A hidden weakness in the design of the nation's first nuclear power plant is being exposed by a report from the U.S. Nuclear Regulatory Commission.



Washington, D.C. The report says that the plant's design lacks a "safety shell" that would prevent a meltdown from spreading.

Graphite's a slippery foe for firemen

By EDWARD DELMON
Graphite, the key component in the nuclear reactor, is a slippery foe for firemen because it does not burn.



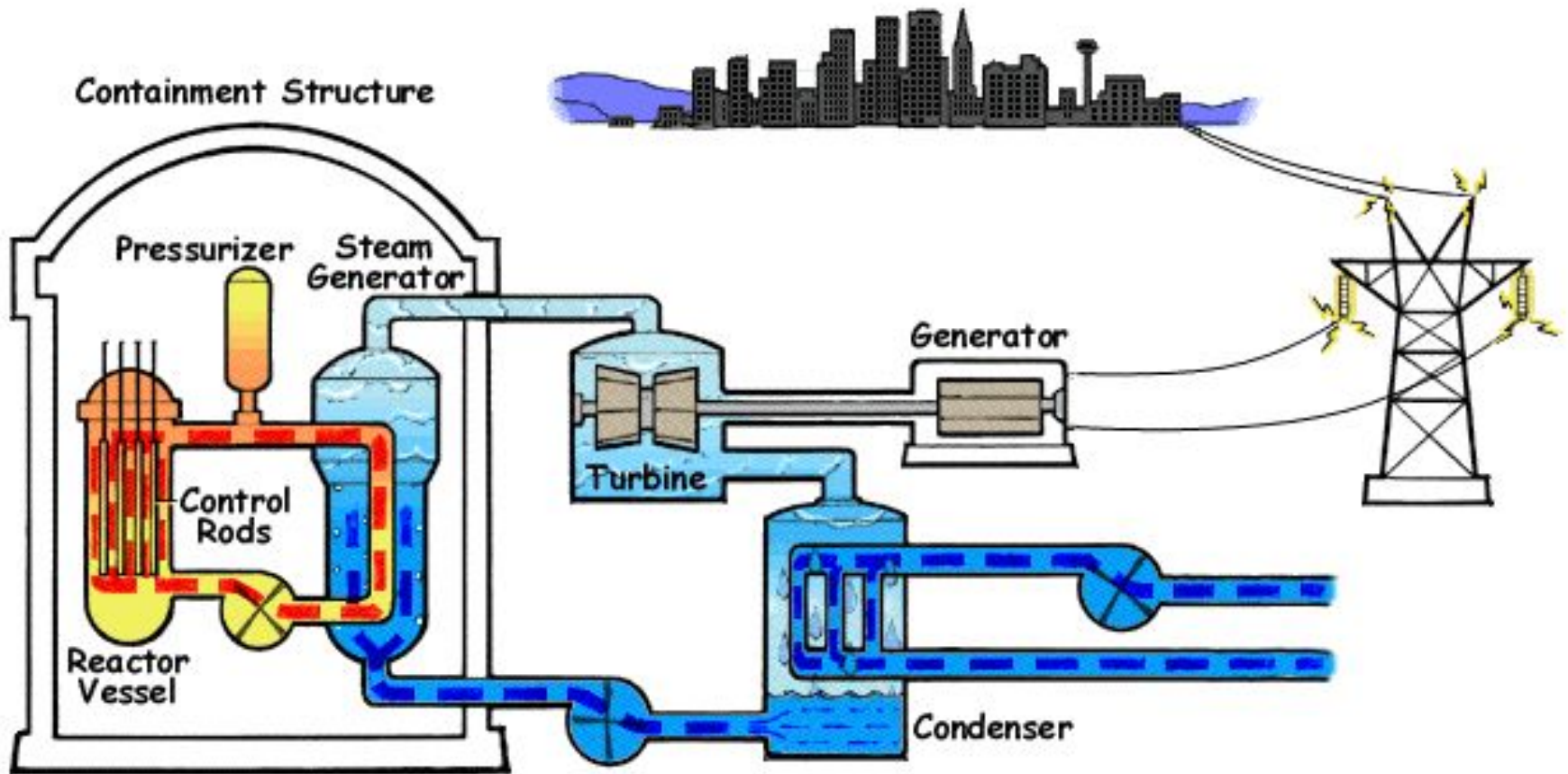
Graphite is a form of carbon that is used in the reactor to slow down neutrons. It is highly resistant to fire and corrosion.

*What happened?

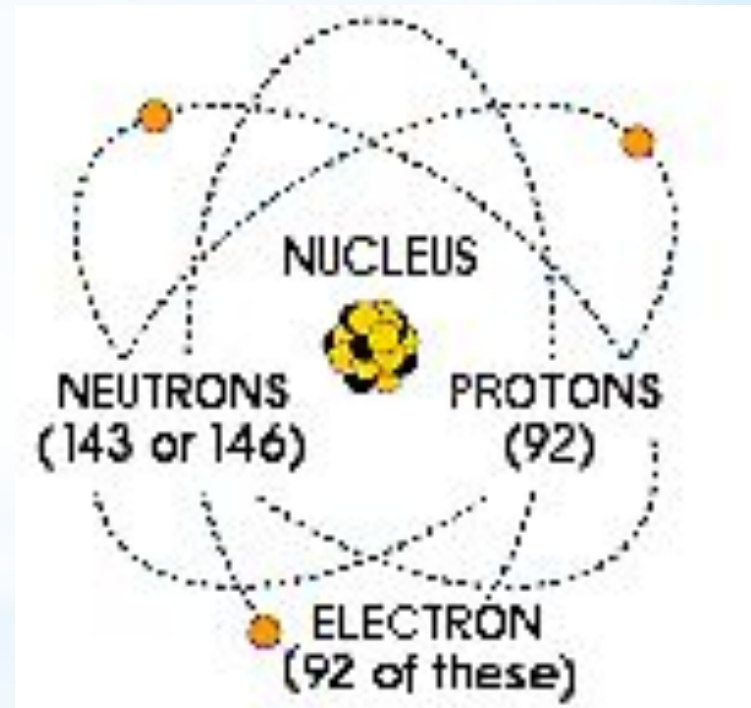
- * Chernobyl nuclear power plant included four reactors, that produced energy. The reactors were model RBMK-1000. In the night of 26th of April a system test made in the reactor number 4 went badly wrong, causing the nuclear accident.



* How does nuclear power work?



*Uranium



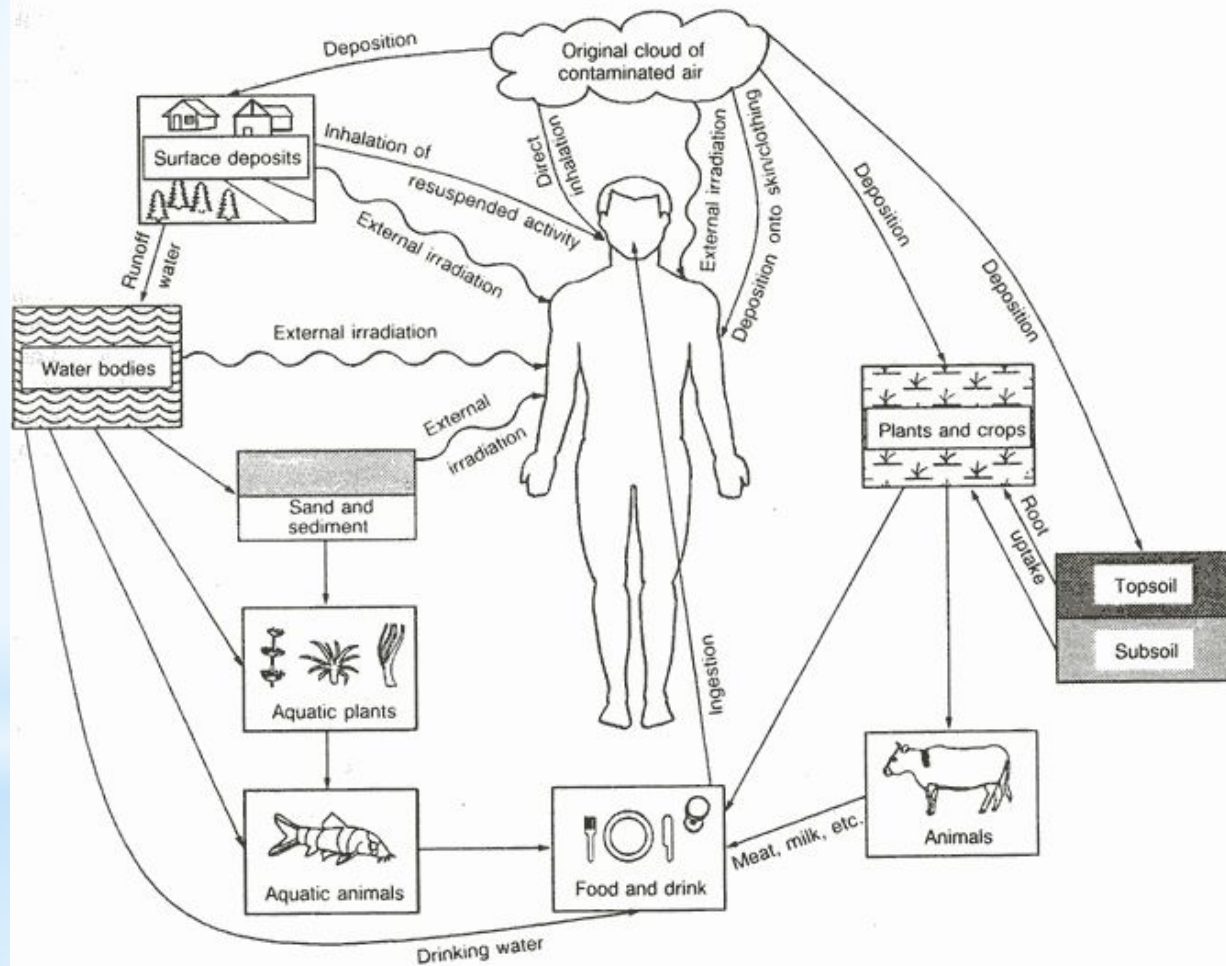
*Consequences of the accident

*The Chernobyl accident had several grave impacts. It released the biggest amount of uncontrolled radioactive gases into the atmosphere in the history.

* 1) On humans:



* Pathway of radiation to human body



Main environmental pathways of human radiation exposure

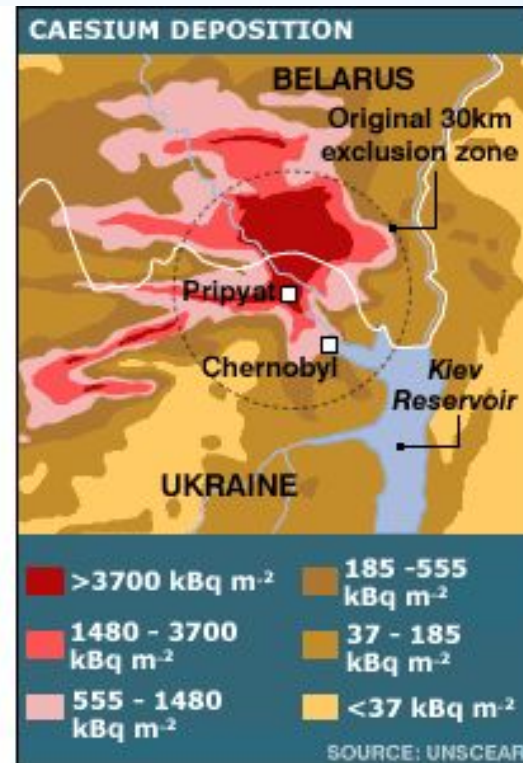
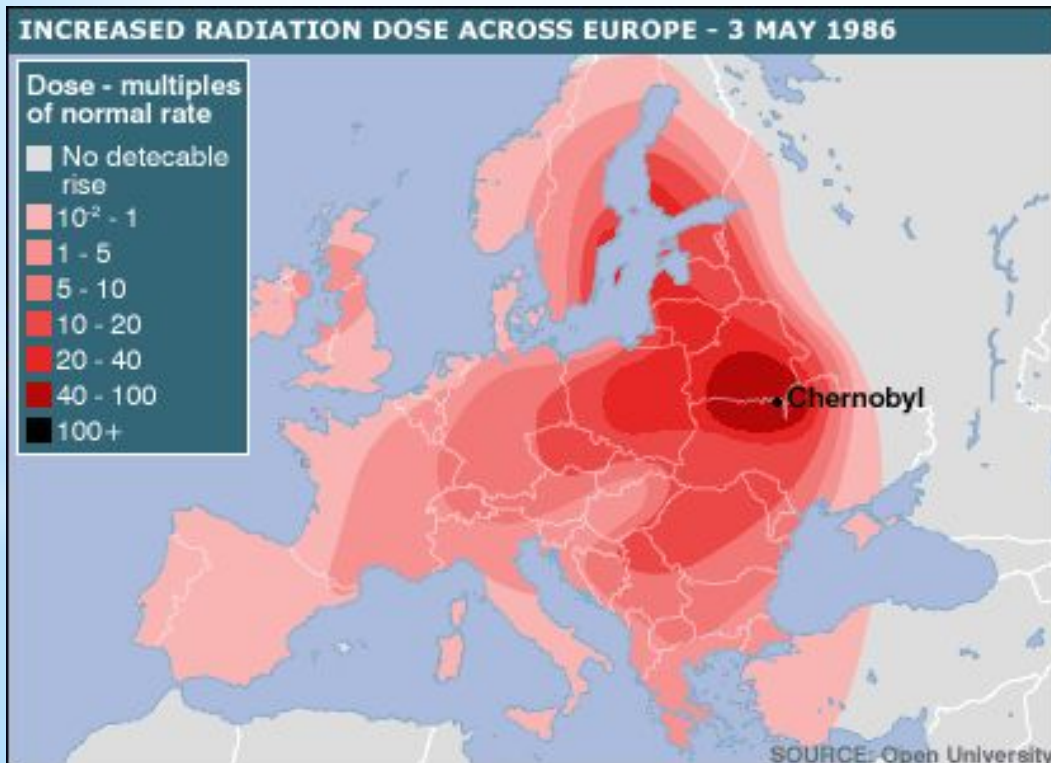
[Source : IAEA technical report ISBN 92-0-129191-4 Vienna 1991]

* How does radiation affect human body

- * The radiation that comes from a nuclear accident is different compared to for example x-ray radiation.
- * It is found to cause cancers, cardiovascular diseases and lower mortality rates.



*Because of the winds, the radiation was carried to several countries.



* Consequences of the accident

* 2) On the environment

* Not only humans, but also the environment was affected due to the accident.



* Timeline of the events:

- 26th of April - the explosion occurred in the 4th reactor of Chernobyl nuclear power plant.
- 27th of April- helicopters start to drop sand to the reactor to stop the on going fire.
- 27th of April - The close town of Pripyat was evacuated.
- 28th of April - Moscow TV announces the accident. International medias also acknowledges the event. Radiation levels are high in different parts of Europe.
- 9th of May - First firemen at the site die due to exposure to radiation.
- 10th of May - the fire in the reactor is extinguished.
- 3th of June - Viktor Petrovich Bryukanov, the director of the Chernobyl plant is prisoned.
- 14th of December - A sarcophagus is made to cover the reactor 4.

- In 2000 the reactor 3, last functioning reactor of Chernobyl is closed down.
- 2017 - New Sarcophagus for reactor 4 should be ready

*Now - 30 years after the accident

<https://vimeo.com/112681885>

- *We should remember the disaster, so that an event like that does not occur ever again.
- *Keep in mind the dangers of nuclear.

* Quiz:

- * 1. When did the Chernobyl accident happen?
- * 2. What was the reason for the accident?
- * 3. In what current state did it happen?
- * 4. What is the chemical reaction called that nuclear powers use?
- * 5. What is the main element (chemical) that is used in nuclear power?
- * 6. Mention some effects of radiation on humans?
- * 7. Mention some effects of radiation on the environment?
- * 8. What is the name of the closest town, that got evacuated?
- * 9. Why did the radiation spread so widely?
- * 10. From what other sources does radiation come from?

* Good luck!