

Environmental Problems Disrupting Natural Cycles by Humans

1. radioactive contamination
 2. pollution of the ocean
 3. depletion of fish stocks
 4. use of fossil fuels
 5. draining of underground aquifers
 6. clearing of forests
 7. use of fertilizers and pesticides
-

- * we will look further into #1 since we in NB
rely on nuclear energy from...

WHERE???

1) Radioactive Contamination...



View of the Point Lepreau Generating Station



When Nuclear Energy Goes Wrong...

1) Fukushima, Japan (March 2011)



Representing the people and organisations of the global nuclear profession

Nuclear Basics

Information Library

The WNA

Home › Information Library › Safety and Security › Safety of Plants

Safety of Nuclear Power Reactors | Chernobyl Accident | Fukushima Accident 2011 | Three Mile Island accident | Tokaimura Ci and Earthquakes | Liability for Nuclear Damage

Fukushima Accident 2011

(updated 2 April 2013)

- Following a major earthquake, a 15-metre tsunami disabled the power supply and cooling of three Fukushima Daiichi reactors, causing a nuclear accident on 11 March 2011.
- All three cores largely melted in the first three days.
- The accident was rated 7 on the INES scale, due to high radioactive releases in the first few days. Four reactors are written off - 2719 MWe net.
- After two weeks the three reactors (units 1-3) were stable with water addition but no proper heat sink for removal of decay heat from fuel. By July they were being cooled with recycled water from the new treatment plant. Reactor temperatures had fallen to below 80°C at the end of October, and official 'cold shutdown condition' was announced in mid December.
- Apart from cooling, the basic ongoing task was to prevent release of radioactive materials, particularly in contaminated water leaked from the three units.
- There have been no deaths or cases of radiation sickness from the nuclear accident, but over 100,000 people had to be evacuated from their homes to ensure this. Government nervousness delays their return.





FACTS from the video...


- earthquake followed by tsunami caused power failure in reactors 1 - 4.
- need 1 million gallons of water to 'cool' the reactors.
- radioactive water got into Pacific Ocean.
- hydrogen explosions occurred.
- radiation lasts a long time and affects many people worldwide.
- mutations occurred amongst babies.
- cancer became more frequent.

2) Chernobyl, Ukraine (April 1986)

[Home](#) [Browse Documentaries](#) [Documentary List](#) [Talks / Lectures](#) [The Store](#)

Chernobyl Heart

 [Environment](#)  [74 Comments](#)



On April 26, 1986, the worst nuclear accident in history occurred when a reactor exploded at the Chernobyl nuclear power plant in Ukraine, releasing 90 times the radioactivity of the atomic bombs dropped on Hiroshima and Nagasaki. Sixteen years later, award-winning filmmaker Maryann De Leo took her camera to ground zero, following the devastating trail radiation leaves behind in hospitals, orphanages, mental asylums and evacuated villages. The Academy Award®-winning documentary short debuts immediately after the America Undercover special “Indian Point: Imagining the Unimaginable”.

[Activity - Energy Pyramids.pdf](#)[Square Based Pyramid Net.pdf](#)

Pyramid Directions

1. Shade the first (bottom) level of each pyramid green.
2. Shade the second level of each pyramid yellow.
3. Shade the third level of each pyramid blue.
4. Shade the fourth (top) level of each pyramid red.
5. Label each level of the first pyramid side with the following terms as you move up the pyramid: producer, primary consumer, secondary consumer, tertiary consumer.
6. Label each level of the second pyramid side with the following terms as you move up the pyramid: plants, herbivores, carnivores, top carnivores.
7. Label each level of the third pyramid side with the following terms as you move up the pyramid: autotroph, 1st order heterotroph, 2nd order heterotroph, 3rd order heterotroph.
8. Draw a picture of what might belong in each level:
 - 1st: flowers, trees, grass, algae
 - 2nd: caterpillars, cows, grasshoppers, beetles
 - 3rd: humans, birds, frogs
 - 4th: lions, dogs, snakes
9. Fold your pyramid on the lines radiating from the center and tape it together.
10. Answer the following questions using your pyramid:
 - a. What are three terms used to describe organisms such as trees?
 - b. What are three terms used to describe organisms such as cows?
 - c. What are three terms used to describe organisms such as humans?
 - d. What are three terms used to describe organisms such as lions?
 - e. What do the organisms in each trophic level eat?
 - f. Do organisms always stay in the same level? Explain your answer.

Attachments

Activity - Energy Pyramids.pdf

Square Based Pyramid Net.pdf