



Knight Center

for Environmental Journalism

Nuclear Energy

There is a renaissance in the interest in nuclear energy among politicians and Americans in general. Some say it is a silver bullet for solving the problems of pollution and limited coal resources. Others say it is unsafe or too costly. Estimates for building a new nuclear power plant run \$12 billion to \$15 billion. There hasn't been a new nuclear facility built in the U.S. for more than 30 years.

The following information came from presentations during the 2008 Society of Environmental Journalists annual conference in Roanoke, Va. Some of the journalists visited Areva, a French company in Lynchburg, Va., that manufactures the uranium fuel rods to power plants. And they toured a 1,000-acre site in Chatham, Va., believed to be rich in uranium. That site is proposed as the first U.S. uranium mine outside the Southwest.

Key points:

- There are 104 nuclear power plants in the U.S. There are 32 potential reactors at 21 sites under review by the Nuclear Regulatory Commission. The first decisions are expected in 2011.
- A large problem with nuclear energy is the disposal of spent uranium. Some European companies claim to recycle 100 percent of used uranium. That is questionable, as they still need new uranium shipments, claims Linda Gunter, media and development director from Beyond Nuclear, a group opposed to the proliferation of nuclear power plants.
- A proposed dump at Yucca Mountain in Nevada would collect spent uranium from across the U.S. and store it underground.
- The Department of Energy requires stainless steel canisters to hold waste, called dry cast storage. They are good for at least 100 years.
- Story ideas: If the Yucca dump is not approved, how does that affect the industry's growth? Some plants store used uranium on site. Is that safe?
- Often unreported is that nuclear power plants run for about three seasons a year. During the off time, workers are trained to recharge the plants.
- Uranium mining is contentious. The most serious health hazard is lung cancer due to inhaling uranium. These particles travel long distances.
- Of all the energy produced in the world, 86 percent comes from CO₂-emitting sources. (Andrew Cook, Areva)
- There are five stages of nuclear power: mining, processing ore, enrichment of uranium, fuel fabrication and use.
- The process of making a fuel rod: uranium is mined, converted to a powder, made into little pellets and sent to fuel rod manufacturers such as Areva.
- There are three isotopes of uranium: 238, 235 and 234. The most important for manufacturing nuclear fuel is 235.

- Enrichment is generally energy inefficient. Researchers are looking at laser enrichment but it is yet to be proven commercially.
- Areva is held to German design standards which are more strict than U.S. standards. The company gets uranium pellets from Richland, Washington. Its two main U.S. competitors are General Electric and Westinghouse.
- The Nuclear Regulatory Commission was formed in 1974 as offshoot of the Atomic Energy Commission. It has more than 4,000 employees; five of them politically appointed.

- SOURCES

Joseph Aylor, Chief Geologist, Virginia Uranium Inc.

Jim Beard, geology professor (Virginia Tech), Curator of Earth Sciences at Virginia Museum of Natural History

Eliot Brenner, Director of Public Affairs, U.S. Nuclear Regulatory Commission.

Linda Gunter, Media and Development Director, Beyond Nuclear (group opposed to nuclear energy advancement)

Luis Reyes, Regional Administrator for Region II US NRC office.

Katherine Slaughter, Senior Attorney, Southern Environmental Law Center

Andrew Cook, Areva plant manager in Lynchburg, VA

(Reported by Andy Balaskovitz, Knight Center for Environmental Journalism)