Nuclear Power’s Dirty Little Secret: Uranium Mining

Doug Brugge
Global Warming
Portage Glacier, Alaska in 1914 and 2004

http://www.worldviewofglobalwarming.org/pages/glaciers.html
Minimum concentration of Arctic sea ice in 1979, while the image on the right shows the concentration of sea ice recorded in 2005.

http://www.msnbc.msn.com/id/9527485/
Larsen B ice shelf collapse, Antarctica, January 31 to March 5 2002.

http://nsidc.org/iceshelves/larsenb2002/
Alternative Energy and Conservation

http://www.eia.doe.gov/oiaf/1605/ggrpt/carbon.html#total
Net Primary Resource Consumption ~97 Quads

Source: Production and end-use data from Energy Information Administration, Annual Energy Review 2002.
*Net fossil-fuel electrical imports.
**Biomass/other includes wood, waste, alcohol, geothermal, solar, and wind.
The Problems with Nuclear
Nagasaki, August 8, 1945

http://history1900s.about.com/library/photos/blyhn10.htm
Countries abstaining from nuclear weapons

Countries outside the Non-Proliferation Treaty

High-risk countries

Countries that have recently given up attempts to acquire nuclear weapons

Countries abstaining from nuclear weapons

http://www.slmk.org/iarom/iaromeng/karnvapenkarta/index.html
Aftermath of Chernobyl Disaster where the reactor exploded. Note extensive damage to the main reactor hall (image center) and turbine building (image lower left).

http://www.answers.com/topic/chernobyl-disaster-jpg-1
Nuclear waste canisters near Aiken, S.C.
Uranium Mining and Processing: The Legacy
Jachymov
Czech Republic
Navajo miners, 1950s

Ralph Luebben and
Milton Snow, NNM collection
Cold War legacy

The Navajo reservation contains some of the world's richest uranium deposits. From 1944 to 1986, nearly 4 million tons of uranium ore were mined to supply material for nuclear weapons and fuel for reactors. Today, more than 1,000 abandoned mines dot the 27,000-square-mile reservation. Shown are mine locations identified to date by the Environmental Protection Agency:

Abandoned uranium mine  Reservation boundary  EPA study areas

Sources: Environmental Protection Agency, U.S. Army Corps of Engineers, Terra Spectra. Graphics reporting by Judy Pasternak

http://www.usdoj.gov/civil/torts/const/reca/index.htm

EEOICP: has awarded 34,774 claims for $3.5 billion by February 4, 2008.
Church Rock Mining District: 50 years of Impacts

July 1979 dam break, tailings spill remains largest release of radioactive wastes, by volume, in US history

Photos & captions: Chris Shuey, SRIC
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<tr>
<th>Source</th>
<th>Released Material</th>
<th>Radiation released</th>
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<tbody>
<tr>
<td>Chernobyl</td>
<td>Nuclear fission by products</td>
<td>270 million curies</td>
</tr>
<tr>
<td>Three Mile Island</td>
<td>Nuclear fission by products</td>
<td>13 Curies</td>
</tr>
<tr>
<td>Sequoyah Fuels Corporation</td>
<td>Uranium hexafluoride gas</td>
<td>3 Curies</td>
</tr>
<tr>
<td>United Nuclear Corporation</td>
<td>Transuranic isotopes and heavy metals</td>
<td>46 Curies</td>
</tr>
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Abandoned Uranium Mines (AUM) in study area

GIS DATA: Eastern Navajo AUM Project and New Mexico Resource Geographic Information System
Figure 1. a. Navajo family hauling water from a windmill.; b. new home under construction within 1200’ of mine waste pile; c. children playing near partially reclaimed waste pile; d. cattle grazing on contaminated soil adjacent to mine waste. (Photo credit, J. deLemos, C. Shuey, and C. George). From delemos et al., in preparation.
deLemos et al, in preparation.
Figure 5: Soil restriction recommendation map.

delamos et al., in preparation.
Gore Oklahoma, January 4, 1986
Sequoyah Fuel Corporation.
Rupture of an overfilled 14-ton cylinder containing approximately 29,500 lbs of gaseous UF6.
Uranium Mining Makes a Comeback
Limited Supply and Growing Demand

A number of factors have driven the price of uranium ore to levels not seen since the industry boom in the mid-1970s.

Historical uranium prices

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<table>
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<tr>
<th>Dollars per pound</th>
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<td>$120</td>
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Source: TradeTech
Total market value: Alternative energy and infrastructure. Estimated fictitious value of next bubble compared with previous bubbles


DONATING MILLIONS Former President Bill Clinton with Sir Tom Hunter, left, and Frank Giustra, major donors to Mr. Clinton’s charitable foundation.
By JO BECKER and DON VAN NATTA Jr.

Late on Sept. 6, 2005, a private plane carrying the Canadian mining financier Frank Giustra touched down in Almaty, a ruggedly picturesque city in southeast Kazakhstan. Several hundred miles to the west a fortune awaited: highly coveted deposits of uranium that could fuel nuclear reactors around the world. And Mr. Giustra was in hot pursuit of an exclusive deal to tap them. ....

New York Times, Published: January 31, 2008
In Situ Leach Mining

Organizing against Uranium Mining
Navajo Nation President Joe Shirley, Jr.
Signed the Diné Natural Resources Protection Act of 2005
New law bans uranium mining, processing throughout Navajo Nation

Navajo Nation web site and press release
Indigenous World Uranium Summit (IWUS) held in Window Rock, Arizona, Navajo Nation from November 30 - December 1, 2006
'If only we'd known'
South Texas residents tell opponents to keep fighting

[Photo by Brian Leddy/Independent]
By Zsombor Peter
Staff Writer, Gallup Independent, Tuesday May 1, 2007
Hearing on the Health and Environmental Impacts of Uranium Contamination in the Navajo Nation

House Committee on Oversight and Government Reform

October, 2007
Sixty years ago, the United States turned to the Navajo to unleash the most destructive force known: the uranium for World War II. Secretly, the uranium used to create the most technologically advanced weapons ever forged came from the land of the most traditional indigenous people of North America, and was dug from the earth with pick and shovel...

"The Navajo People and Uranium Mining is the oral history of how these Navajo people lived, how they worked, and how, sadly, how they died waiting for compensation for working in the most hazardous conditions imaginable, and which were known at the time yet concealed from them. These Navajo miners and their families became, in essence, disposable people."

— JOE SHIBLER, JR., President of the Navajo (2001) Nation

A team of Navajo people and supporters who began the Navajo Uranium Miner Oral History and Photography Project from which this book stems, that project team, based at Tulane University School of Medicine in Boston, recruited the speakers who told their stories, which are reproduced here. There are also narrative essays that assess the experiences of the Navajo people from diverse perspectives (history, psychology, culture, advocacy, and policy). While the points of view taken are diverse, there is a range of perspectives as to what would constitute justice.