



Climate Chaos and Nuclear Power

INTRODUCTION

Nuclear power reactors will not be able to operate safely or reliably under the increasingly unstable weather conditions caused by climate change. The nuclear power industry falsely asserts that it is a solution to the climate crisis. In reality, nuclear power, combined with climate chaos, risks potentially catastrophic releases of radioactivity downwind and downstream of reactors and their waste storage facilities.

Ever more severe weather risks catastrophic radioactivity releases from atomic facilities

- The United Nations Intergovernmental Panel on Climate Change (IPCC) predicts that human-caused climate change will very likely both increase and intensify severe weather.
- Nuclear reactors and radioactive waste storage sites contain enormous amounts of hazardous radioactivity. This could be catastrophically unleashed during accidents caused by severe weather disasters, threatening to kill or injure tens to hundreds of thousands of people living downwind and downstream, and contaminate vast regions, causing hundreds of billions of dollars in property damage.

Hurricanes, tornadoes, and floods threaten reactors and waste

- Despite the risks of more frequent and more powerful hurricanes on the Gulf of Mexico and Atlantic, a large number of reactors currently operate along or near these coasts, especially in the Southeast. The vast majority of newly proposed reactors in the U.S. would also be built in this region.
- Hurricanes and tornadoes risk devastating accidents, such as reactor core meltdowns and waste pool conflagrations. Hurricane Andrew in 1992 scored a direct hit on Turkey Point in Florida, necessitating diesel fuel to be diverted from area hospitals in order to keep the nuclear plant's emergency generators functioning. A tornado struck the Davis-Besse reactor in Ohio in 1998. Offsite electricity was restored just before emergency generators failed, perilously risking the storage pool overheating which could have led to spontaneous combustion of the waste.
- Severe weather-related events, and resulting power outages, also require reactors to shut down for extended periods for safety reasons. Hurricane Katrina forced reactors in Louisiana and Mississippi to power off, when electricity was needed most. The 2003 Northeast power outage spread to 50 million people as dozens of reactors in the U.S. and Canada were forced to shut down for safety reasons due to electric grid instability.
- Hurricane Katrina made it clear that U.S. emergency preparations and evacuation procedures are woefully inadequate and begged the question as to what would happen during a severe-weather-induced radiological emergency. Ironically, loss of power makes many emergency evacuation sirens around atomic reactors inoperable since their power is tied to the electrical grid.

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- Floods at the Cooper reactor on the Missouri River in Nebraska, and the Prairie Island nuclear plant on the Mississippi River in Minnesota, in the 1990s showed the risks of loss of emergency systems, spread of radioactive contamination, and even loss of evacuation routes for neighboring communities.
- Flooding has spread contamination at radioactive waste dumps as well. While the proposed national dumpsite for high-level radioactive waste at Yucca Mountain is already geologically and hydrologically unsuitable, water flow through and radioactivity leakage from the site will only grow worse as climate change increases precipitation in Nevada.

Droughts and heat waves strain reactors and ecosystems

- Climate change will further constrain North America's over-allocated water resources, increasing competition among agricultural, municipal, industrial and ecological uses. Some nuclear plants use billions of gallons of cooling water each day, among the largest users of water in the U.S.
- Dozens of U.S. reactors face shutdowns or reduced generation due to insufficient water in drought-stricken lakes and rivers needed for cooling. A U.S reactor in Alabama was forced to shut down last summer due to limits put in place to prevent hot water discharges from damaging aquatic plants and animals. Reactors in Illinois, Michigan, and Pennsylvania have also been forced to lower power output or shut down completely, as cooling water supplies became too hot, or plant discharges violated environmental protection regulations.
- Many reactors in France, Germany, Romania, and Spain were forced to lower power or shut down completely during droughts and heat waves this decade.
- As the Union of Concerned Scientists has said, "Mercury rising means nuclear power electrical output and safety margins falling."

Sea level rise

- Depending on their elevation above sea level, coastal reactors – and their high-level radioactive wastes stored on-site – could eventually be flooded by rising sea levels, or made more vulnerable to storm surges during hurricanes. As mentioned above, dozens of U.S. reactors are already located on or near the Atlantic and Gulf coasts, and many more are proposed to be built.

For more details, as well as a full list of references, please see the full "Climate Chaos and Nuclear Power" nine page report at: <http://www.beyondnuclear.org/climate-change-resources/>

2/19/2008

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