Top News Headlines

Environment News Message Board

Personalize Your News

Environment Websites

News Web Guide

Current Events Chat

Science News

E-Wire Instant Updates

Environment News Index

Environment Events Calendar

ENS Features
EcoTravel
EDF Scorecard
Shopping Green
Cartoons

Environment

ENVIRONMENT NEWS SERVICE

Risk Factors Multiply at Carolina's Nuclear Power Plants

CHARLOTTE, North Carolina, October 20, 2000 (ENS) - A nuclear watchdog group is urging the U.S. Nuclear Regulatory Commission to take immediate action to deal with the alleged dangers posed by four nuclear power plants. A new government study says the reactors exceed the "acceptable risk" of containment failure.

Catawba Nuclear Power Plant (Photo courtesy Nuclear Regulatory Commission)

The power plants in question are located in the vicinity of the Charlotte, North Carolina metropolitan area. Two of the plants, known as Catawba One and Two, are located near Clover, South Carolina. The other two facilities, known as McGuire One and Two, are located near Huntersville, North Carolina.

All four nuclear units are operated by the Duke Power Company, which provides electricity to some two million customers in a 22,000 square mile service area of the Carolinas.

The Nuclear Control Institute, a non-governmental organization, based its call for intervention this week on a new study released by the federal government agency responsible for nuclear oversight in the United States, the Nuclear Regulatory Commission (NRC).

The government study used computer models to evaluate the risk of a radioactive release at the Duke reactors, all of which employ a rarely used type of "ice condenser" containment system.

McGuire Nuclear Power Plant (Photo courtesy Nuclear Regulatory Commission)

Containments systems are critical in preventing catastrophic releases of radioactive materials during an accident.

The Catawba and McGuire facilities are among a handful of pressurized water reactors worldwide with ice condenser containments.

The ice condenser containment units are typically thin steel shells that have only half the volume and failure pressure of the massive concrete containments which surround the reactor vessels at most other U.S. pressurized water reactors.

Ice condenser plants are equipped with channels filled with blocks of ice that are supposed to cool any steam blasted into them during a core melt accident. They condense the steam to water, reducing the threat of containment rupture.

They are also required to have "hydrogen igniter" systems that are intended to burn the large quantity of hydrogen gas that would be generated in such an accident before it reached an explosive concentration.

Children at play in a Huntersville, North Carolina park (Photo courtesy Town of Huntersville)

The newly released NRC study evaluated a scenario where the hydrogen igniter systems would not be available, such as might occur during "station blackouts" where both off and on site power could be lost.

The NRC concluded that in such a scenario, the probability that hydrogen combustion would rupture the containment systems is 34 percent for Catawba and 58 percent for McGuire.

In both cases, these values exceed the limit of 10 percent which the NRC considers an "acceptable risk" of containment failure.

Using the same method of analysis, the NRC previously found that the risk of containment failure during meltdowns at "large, dry" containments is less than 0.1 percent.

"The NRC's new analysis demonstrates that the risk of a major radiological release from a reactor meltdown accident is hundreds of times higher at Catawba and McGuire than at pressurized water reactors with conventional concrete containment buildings," said Dr. Edwin Lyman, Nuclear Control Institute's scientific director.

"The Commission should act immediately to reduce the threat to the hundreds of thousands of individuals living near these plants."

MOX fuel rods composed of mixed uranium and plutonium oxides (Photo courtesy Cogema)

NCI, a nuclear non-proliferation research and advocacy institution based in Washington, DC, also urged the NRC to reject plans by the Charlotte based Duke Energy Corporation to use uranium and plutonium mixed oxide (MOX) fuel in its Catawba and McGuire ice condenser nuclear plants.

Dr. Lyman says additional safety problems associated with the use of MOX fuel in the Duke reactors would "make an already risky situation even worse" and, in event of severe accident, result in a dramatic increase in cancer deaths.

In March 1999, a consortium including Duke Energy was awarded a U.S. Department of Energy contract to convert plutonium from