

## **GLOBAL NUCLEAR ENERGY PARTNERSHIP: ENVIRONMENTAL, ECONOMIC, AND SECURITY RISKS**



The Department of Energy (DOE) has asked Congress for \$302 million in fiscal year 2009 for the Global Nuclear Energy Partnership (GNEP), which it also calls the Advanced Fuel Cycle Initiative (AFCI). GNEP is a Bush Administration scheme to revive the dangerous practice of reprocessing irradiated nuclear fuel. GNEP would endanger the environment, encourage nuclear bomb-making, squander U.S. taxpayer dollars, and deepen the nuclear waste problem.

Under the GNEP plan, some countries would supply and fuel nuclear reactors for other, as-yet-unnamed countries that would agree to forgo uranium enrichment and plutonium reprocessing. Once the fuel rods were irradiated, they would be sent back to the suppliers for eventual reprocessing.

Reprocessing is the fundamental link between a nuclear reactor and a plutonium bomb. Irradiated, or "spent," fuel is separated into its constituent ingredients, usually using acid. One of the ingredients, plutonium, can be used to make new reactor fuel — or nuclear bombs. Since separated plutonium encourages nuclear weapons proliferation, President Ford halted the export of reprocessing technologies. President Carter outlawed U.S. commercial reprocessing in 1976. Although the domestic ban was lifted more than 20 years ago, reprocessing is so expensive that the U.S. nuclear power industry has not resumed it.

While the French reprocessing program of the state-owned company Areva is often presented as an example to follow, its financing is totally dependent on state support and by forcing a reluctant utility to accept plutonium fuel.

### **GNEP INCREASES CONTAMINATION**

Reprocessing produces large amounts of very dangerous waste that is intensely radioactive, toxic, thermally hot, and difficult to contain. The tanks used to store this liquid high-level waste must be cooled or the waste will explode. In 1957, one such tank exploded in Russia, contaminating 6,000 square miles. Liquid high-level waste from Cold War reprocessing presents the greatest contamination threat and cleanup challenge in the U.S. nuclear weapons complex. At Hanford, Washington; Savannah River Site, South Carolina; and the Idaho National Laboratory, millions of gallons of liquid waste sit in aging "tank farms," all of which have leaked, threatening crucial water resources.

### **Recommendations**

- Transfer the \$302 million FY 2009 Budget Request for the GNEP/AFCI programs to DOE's waste cleanup program.
- Do not extend the \$18.5 billion in nuclear power loan guarantees.

## **GNEP ENCOURAGES NUCLEAR BOMB-MAKING**

GNEP proponents claim it is a way to control nuclear materials proliferation, but the opposite is true. Irradiated fuel that has not been reprocessed is “self protecting” because the fuel is heavy, bulky, and intensely radioactive. But separated plutonium is a concentrated powder, and less than 20 pounds are required to make a bomb. Loss or theft of this dangerous material is hard to guard against in the complex plutonium separation factories because it is very difficult to track plutonium through each step of the process.

One GNEP plan is to “burn” reprocessed plutonium in “fast” reactors, which are prone to accidents and cost up to half again as much as most of the reactors used for electricity in the U.S. today. Worldwide, fewer than 20 fast reactors have produced electricity. Use of fast reactors and reprocessing only adds to the current worldwide surplus of separated, weapons-usable plutonium, which already stands at 250 tons – enough to make approximately 30,000 nuclear bombs.



## **GNEP WASTES BILLIONS OF DOLLARS**

DOE has not provided a total cost estimate for GNEP, but in 1996, the National Academy of Sciences estimated that reprocessing the current U.S. spent fuel inventory could easily add \$100 billion to our nuclear tab. Each of the new fast reactors would cost several billion more. Approximately \$150 billion more will be needed to bring some level of cleanup to the three U.S. weapons sites and the commercial site in West Valley, NY, that previously reprocessed spent fuel. These are all costs the taxpayer—not the nuclear power industry—bears.

## **CANNOT SOLVE U.S. NUCLEAR WASTE PROBLEM**

As its efforts to open a spent fuel and high-level waste repository at Yucca Mountain, Nevada, are clearly failing, DOE is trying to paint GNEP as a “recycling” solution. But reprocessing spent fuel does not conserve resources or reduce waste. If spent fuel is reprocessed once, as it is in France, it does not appreciably reduce the space needed in a deep geologic repository. At the same time, it produces other radioactive wastes that remain hazardous for thousands of years. Even if spent fuel would be repeatedly reprocessed and burned in dangerous fast reactors, there would still be waste that requires geologic disposal.

## **CURRENT SITUATION**

DOE says more than 20 other countries are interested in participating in GNEP, though no binding agreements have been reached. The Bush administration plans to make GNEP decisions in 2008, even though Congress has not authorized the program and, in the FY 2008 Omnibus Appropriation, specifically prohibited using any funds “for facility construction for technology demonstration of commercialization.” DOE’s plan goes directly against the 2007 recommendations from the National Academy of Sciences, which is sharply critical of the program on nearly every front.

Another provision of the FY 2009 Budget Request would extend the \$18.5 billion in loan guarantees for new nuclear power plants currently appropriated through September 30, 2009 for two more years. Congress has already provided about a billion dollars in production tax credits, up to \$2 billion in risk insurance for new nuclear power plants, and billions more for nuclear reactor licensing and new technologies. The loan guarantees to new nuclear plants, which could not operate until 2015, should not be extended to provide even further subsidies. Instead, any federal loan guarantees should be for renewable energy and efficiency programs that produce and save energy in the next few years.