

APR08-2008-000408

Abstract for an Invited Paper
for the APR08 Meeting of
the American Physical Society

**U.S. Workforce and Educational Facilities' Readiness to Meet the Future Challenges of Nuclear
Energy**

SEKAZI MTINGWA, Massachusetts Institute of Technology

Using nuclear energy to generate electricity continues to be a topic of considerable debate. Currently, 20% of the electricity in the U.S. comes from its fleet of 104 commercial nuclear reactors, and they annually displace on the order of one hundred million metric tons of carbon emissions. These reactors currently account for 70% of the non-carbon emitting electricity production in the United States. Due to the recent interest by the Federal government and others in expanding the nuclear energy option, the American Physical Society's Panel on Public Affairs sponsored a study of the U.S. workforce and educational facilities' readiness for three scenarios out to the year 2050. They range from maintaining the current number of nuclear reactors, although some may be retired and replaced by new ones; significantly increasing the number of reactors, to perhaps as high as 200 or more; up to significantly increasing the number of reactors while closing the fuel cycle by reprocessing and recycling spent fuel. This talk reports on the results of that study.