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**Statement of Arjun Makhijani, Ph.D.,  
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On the release of Insurmountable Risks by Brice Smith  
At the National Press Club in Washington, D.C.  
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Uranium enrichment and reprocessing, once terms reserved for eggheads dealing in nuclear esoterica, are in the headlines every day. Politicians and diplomats argue about them and the proliferation threats arising from the spread of commercial nuclear power technology.

Yet, strangely, in a parallel universe also on the public stage, is the nuclear industry's claim that nuclear power can play a vital role in saving the Earth from another peril - severe climate disruption caused by the anthropogenic emissions of greenhouse gases.

Could it? Could nuclear power really help save the world from what is arguably the worst environmental scourge ever to confront humanity? History would suggest two things: caution about the nuclear establishments messianic proclamations and careful analysis of the problem.

Insurmountable Risks is just such a careful analysis. It is true that carbon dioxide emissions from a nuclear electricity system can be kept very small or, theoretically, even reduced to zero if fossil fuels are eliminated from the nuclear fuel cycle. But physics is not the problem now; nor was it in the early years of the nuclear industry when physicists saw the in nuclear energy a "magical" energy source that would create more fuel during the operation of reactors than was consumed in the production of electricity.

The central problem is not the technical feasibility because there are many possible ways to create a low carbon dioxide energy system. The crucial questions lie in the costs and consequences of using different technologies to overcome the problem of CO2 emissions. As regards cost, it turns out that wind power with pumped hydro storage and standby single cycle natural gas turbines or combined cycle natural gas power plants to complement it could go a long way towards eliminating carbon dioxide emissions in the electricity sector. CO2 emissions from coal-fueled generating plants can be mostly eliminated if used in conjunction with gasification

and carbon dioxide sequestration technologies. The costs of all these approaches are comparable to estimates for nuclear power made by its advocates.

There are other major questions:

- What will be the risks of catastrophic accidents if we build reactors at the rate of one a week, cookie-cutter style, around the world?
- What will happen to the security of the power supply in case of terrorist attacks or severe accidents on the scale of Chernobyl?
- What about all the plutonium in the waste?
- What about the proliferation of nuclear technologies like reprocessing and enrichment?

The analysis in *Insurmountable Risks* provides rich detail for the first time about the risks associated with the vast scale of nuclear power deployment that will be required for it to make a significant impact even on the electricity sector alone, not to speak of the entire energy sector. The requirements include a large number of enrichment plants, risks of serious accidents, many nuclear waste repositories, even if reprocessing is adopted, and (very likely) the adoption of reprocessing involving the separation of weapons-usable materials.

The United States is rushing back into nuclear power for temporary advantages that seem more linked to public relations, more or less like the way it adopted the technology the first time around in the 1950s. In the aftermath of the U.S. and Soviet thermonuclear detonations that alarmed the world, the United States sought to derive "propaganda capital" (in the words of then AEC Commissioner Thomas Murray) by building civilian nuclear power plants. Such plants would allow it to claim that the U.S. atom was peaceful, even as both the U.S. and the Soviet Union were rushing headlong into a nuclear arms race.

Now, over half a century after the fantasies of power "too cheap to meter" and the propaganda of the peaceful atom, the United States has the dubious distinction of being the leading emitter of greenhouse gases while at the same time refusing to adopt policies that would mandate the reduction of carbon dioxide emissions, unlike most other Western industrial countries. Yet, the U.S. is promoting nuclear power and creating massive subsidies for it partly under the banner of reducing CO<sub>2</sub> emissions.

Were there no alternatives, the severity of the threat facing humans and the environment from global climate change might warrant serious consideration of nuclear energy. But it is irrational to incur the proliferation headaches and accident risks of nuclear power when safer alternatives are clearly available at the same cost. The great need is not for nuclear power or policies that are steeped in subsidies for outdated and dangerous technologies. Rather we need one that pays serious attention to the problems of security and that also has reasonable cost, reliability, and environmental sanity as its goals.