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Hearings on

The National Security Implications of Climate Change

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Mr. Chairman and Members of the Committee. It is an honor to be asked to testify before you today on this important subject. By way of identification, I am now a Vice President of a large consulting firm, where I work on energy issues; before I became a consultant five years ago I practiced law for 22 years in the field of civil litigation and I have also served in the federal government for a total of twelve years on five different occasions, holding Presidential appointments in four administrations, two Republican and two Democratic – all in the field of national security. Most recently I served as Director of Central Intelligence 1993-95. I am speaking today solely on my own behalf and not that of any institution with which I am associated.

I have attached to this opening statement a 24-page draft of a chapter I am contributing to a collection to be published in several months on national security and climate change. As the chapter's text indicates, of the several authors submitting contributions to this book I was asked to concentrate on the extremely severe case of several possible climate change scenarios.

In my view, in the interest of our nation's security, for the foreseeable future we need to keep our attention on two potentially disastrous types of disruptions of our society. I call these "malignant" and "malevolent" disruptions. The first, like cancer in the human body, is not intentionally caused but the risk of disruption or even disaster may be enhanced by some aspects of our behavior – if we overload our electricity grid we may become more vulnerable to blackouts, or if we put too much carbon into the atmosphere we may enhance the risk of climate change. But terrorists are smarter than tree branches in storms, so we also need to be concerned about "malevolent", or intentional, attacks. Some of these may exploit vulnerabilities in our energy production and distribution or other weaknesses in our infrastructure.

If we want to be as secure as possible, we cannot ignore either type of threat. But normally these two threats are addressed by different groups who sometimes give short shrift to the threat that is of central concern to the other. In the chapter I call the group that focuses on malignant threats such as climate change the "tree huggers" and that which focuses on malevolent threats such as terrorism the "hawks". The first 15 pages of the chapter address both of these types of risk: malignant and malevolent.

I would emphasize that although there is broad scientific agreement that future climate change is a serious problem and, in important measure, one that is caused by human activity, there is substantial uncertainty in predicting the point at which the increasing concentration of global warming gases in the atmosphere would have enough of an effect on temperature to lead to irreversible climate change. This is because climate models tend to be linear and have great difficulty forecasting the exponential changes which at some point could tip us over into irreversibility -- for example, the rapid melting of the West Antarctic ice sheet, which could cause a rise of five meters or more in sea levels. So most of the predictions of disastrous change rely on data but use that data to construct analogies to climate change in the past (pp. 4-6 of chapter). As NASA's James Hansen puts it, "I'm a modeler, too, but I rate data higher than models."

Still, even relying on analogies, when one considers today's level of CO2 emissions and the prospect of substantial growth in them as world population increases and economies develop (pp. 6-7), it seems clear that there is enough degree of risk that some action must be taken. This is in substantial part because of prospective sea level rise and coastal flooding, which Dr. Hansen calls "*the* big global issue." Such flooding could have disastrous effects on populations in this country and all over the world and seriously affect our military capabilities, world political balance, energy and water systems, and much else (pp. 7-11).

At the same time, many aspects of our society, including the way we produce and use energy, make us vulnerable to terrorist attack for the foreseeable future. These include our dependence on oil (pp. 11-13) and the vulnerability of our electricity grid, particularly to physical attack on its transformers and cyber attack on its Supervisory Control and Data Acquisition (SCADA) systems (pp. 13-14). An important recent commission report also describes the vulnerability of the grid to Electro-Magnetic Pulse (EMP) attack, unfortunately something that could readily be contemplated in the not-distant future by countries having only a primitive nuclear weapon, a SCUD missile, and a fishing boat (pp. 14-15).

The last eight pages of the chapter set out an imaginary meeting between a "tree hugger" and a "hawk" to try to design an energy policy for the country in

light of the need to deal with both malignant and malevolent risks. I picked two of my favorite Americans for these roles. For the tree hugger I chose the ghost of John Muir and for the hawk the ghost of General George S. Patton. In the meeting Muir is focused exclusively on climate change and Patton exclusively on terrorism, but although there are points where they disagree, they are somewhat surprisingly able to come up with a common nine-part energy plan that reduces both types of risks substantially – it involves energy conservation, distributed and renewable production of both electricity and alternative fuels, plug-in hybrids and flexible fuel vehicles. Whatever package the United States settles on, Mr. Chairman, in my view we should do so in the spirit of this mythical Muir-Patton discussion and treat seriously both of these looming threats to our nation and indeed to civilization itself.