Our first glimpse of the possibility of this threat occurred in 1961. It was in the Pacific and we were then doing a series of nuclear tests, and this was our first and last high altitude test. It was over Johnston Island, and the weapon had an electromagnetic pulse. It was the first time that we had done that. No one knew what was going to happen as a result of that test, and the consequences were unexpected and really quite striking.

Hawaii was about 800 miles away. If you think back to 1961, we did not have all of the electronics that we have today. We were more in an electronic infrastructure than we were in an electronic infrastructure, and the electrical infrastructures are very much more robust than an electronic infrastructure because you are dealing with big structures and heavy wires and so forth. Even so, the effects of this detonation above the atmosphere resulted in an EMEMP in the electrical circuits.

There were many disruptions in electrical and certainly in electronic equipment such as existed those days in Hawaii 800 miles away. The Soviets were also doing testing simultaneously with ours and they had more experience than we did. We now have a name for this phenomenon. We call it electromagnetic pulse, or EMP. And here I have a chart which shows very schematically what is happening.

We detonate above the atmosphere, and there is an immediate distribution of gamma rays that travel at the speed of light that will strike every object within line of sight. And when these gamma rays reach our atmosphere, they produce what is called Compton electrons, all of this essentially at the speed of light, and these Compton electrons then become a force which is very much like a nuclear storm magnified many, many times. And if you think, Mr. Speaker, of the electromagnetic pulse, the size of the atmosphere, and how large an area. That is line of sight, with the simple geometry of the Earth and the height. If you are 200 miles up, you cover a bigger area. And if you are 300 miles high up with the center of that in Iowa, Nebraska, about in that area, it covers our whole country. The marginally it covers south Florida, northwest Washington State, and Maine, all are covered with a blast of about 300 miles high above Nebraska or Iowa.

The next chart is a little more detailed presentation of the blast area. And it shows that it is not simple concentric rings because of the dynamics of the detonation of a nuclear weapon. You have a distribution of intensities; generally speaking, you have a blast that is the equivalent of EMP.

The level to which we tested is classified, but if the Russian generals are correct that they developed weapons at EMP. It has a missile which is taking off there. We are not even sure that we can launch through a robust EMP laydown. What I am told is that we tested our missiles and we found some deficiencies and we fixed them and we have done that several times, and the last time we corrected the deficiencies, we intentionally did not test again, hoping that we had fixed all the deficiencies. But knowing that if we tested and found deficiencies that that intelligence would probably get out to our enemies and they would know that we were vulnerable, and rather than run that risk, we believe that we had corrected all the deficiencies; so we have not yet know for certain that we could launch our ballistic missiles through an EMP laydown. It shows effects on automobiles.

The next chart is a little more detailed presentation of the blast area. And it shows that it is not simple concentric rings because of the dynamics of the detonation of a nuclear weapon. You have a distribution of intensities; generally speaking, you have a blast that is the equivalent of EMP.
The next chart answers an important question that I am sure a lot of people ask about EMP. This is from a Russian publication, and it shows the effects of EMP. The next chart just builds on the previous chart.

And here are a couple of days in Moscow with Bill Graham and Rumsfeld. Bill Graham, who was the chair of this, was Rumsfeld’s co-chair when they did that very important study on the emerging ballistic missile threat that came out a few years ago.

It is interesting. I spent a couple of days in Moscow with Bill Graham and Rumsfeld when we were briefing members of the Russian Duma so that they would understand that our withdrawal from this treaty that prohibited us from protecting ourselves against intercontinental ballistic missiles had nothing to do with Russia because we cannot imagine that we could produce such a weapon without their consent to protect us against the literally thousands of intercontinental ballistic missiles that Russia has. But there are some new players on the scene out there, like China and North Korea and Iran and who knows who may get in line.

And we could, if we felt, with the development of a system, the successful test just a few days ago, be able to take out a few weapons from a country like this. Another very important member of this commission was Dr. Joan Woodward, who is the deputy director of the Sandia Labs out in Albuquerque, New Mexico. I was out visiting my son there, who works at the lab. And he brought this book out. And I was reading it that led me to believe that they might have some knowledge that would be helpful in this EMP study.

So I asked for a briefing. I had not looked at the list and remembered speaking with someone who was a member of the commission. And I came in for a 5-hour classified briefing on the commission’s work. And Dr. Joan Woodward had at her disposal all of the resources of the Sandia Labs. So they did a really magnificent job of studying the threat, not just to our military but to our national infrastructure.

The next chart just builds on the point that I made that most of our citizens may not know anything about EMP, because it is really a Buck Rogers Star Wars kind of a phenomena. It almost seems like science fiction.

The fact is that, although few of our people know about EMP, all of our potential enemies know about EMP.

And I just wanted to make that very clear, because I do not want anybody to have the notion that we are somehow informing a potential enemy of something that he does not know about.

This first quote here is a very interesting one. This is not exactly the quote as I remember, but it is a pretty
good paraphrase, because I was there. It was May 2nd of 1999. And I was sitting in a hotel in Vienna, Austria, with ten other Members of our Congress and three members of the Russian Duma.

I can tell you exactly when we were there. And I can remember when the three prisoners, hostages, whatever you want to call them were released by Yugoslavia. You may remember that event. They were released to Jesse Jackson as you may remember.

Four days we sat in that hotel room hammering out a framework for an agreement. Five days later, that was voted by the G–8. Russia joined the G–7, because the only country that the Bosnians had enough respect for to be controlled by them was Russia. And when the G–7 joined with Russia, they used the framework agreement that we had developed. And that ended the hostilities there as you may remember.

Well, one of the three Russians there was Vladimir Lukin. He was the ambassador to the end of the Clinton administration of the beginning of the Clinton administration. At the time we were there, he was the chair of their equivalent of our International Relations Committee in the Russian Duma.

He was a tall fellow with even shorter arms. And he was extremely angry. And he sat there for 2 days with his arms folded across his chest looking at the ceiling. And then he made this statement, and what he said was, as I well remember it, “If we really wanted to hurt you with no threat of retaliation, we would launch an SLBM and we would detonate a nuclear weapon high above your country and shut down your power grid and your communications for 6 months or so.”

That was Vladimir Lukin. Another Russian who was there, who was I think the third ranking Communist, and yes, there is still a big Communist Party in Russia, who was the third ranking Communist, Alexander Shurbanov. And he smiled and he said, “If one weapon would not do it, we have some spares, like I think at least 7,000 spares.”

You see, the reason for no fear of retaliation was that if it was launched from the ocean, we would never know where it came from. Well, that was his comment.

Now, all of this is from the EMP commission. None of those are my statements. The statements are from the EMP commission. They describe EMP as the key to victory and describe scenarios where EMP is used against U.S. aircraft carriers in a conflict over Taiwan.

Again, a survey of worldwide military and scientific literatures impressed by the commission found widespread knowledge about EMP and its potential military utility, including in Taiwan, Israel, Egypt, India, Pakistan, Iran and North Korea.

The first bullet is kind of repeated in the next chart, so I will skip to this one. Iran has tested launching a Scud missile from a surface vessel, a launch mode that could support a national or transnational terrorist EMP attack against the United States.

It should be noted that you do not have to be very technically adroit or very competent to launch an EMP weapon, because if you miss by 100 miles that is just about as good as a direct hit because there is a large area that this covers.

A Scud missile can launch about 180 miles high. That will not blanket the whole United States, but a Scud missile launched from a ship off our coast could shut down all of New England and much of the mid-Atlantic area with an EMP blast. Now, if you thought recovery from Katrina was difficult, imagine an area many times that large with no remaining infrastructure in terms of communications or power. That is the problem we would have. If it blankets our Nation, of course, we have an essentially irresolvable problem.

The next chart continues with what our potential adversaries know about EMP, and again, all of this is from the EMP commission report. If the world’s industrial countries could devise effective ways to defend themselves against EMP, this is an interesting one from Iranian Journal in 1998, even before the present wild man who is there, if the world’s industrial countries fail to devise effective ways to defend themselves against EMP, and again, all of this is from the EMP commission report. If the world’s industrial countries fail to devise effective ways to defend themselves against EMP, then they will disintegrate within a few years. 150,000 computers belong to the U.S. Army. It is probably more than that now, and if the enemy forces succeeded in infiltrating the information network, which an EMP would do if it shuts us down, then the whole organization would collapse, the American soldiers would not function, nor would they be able to fire a single shot. Now, I am not sure that is totally true, because I think the Russians are pretty much immune to the EMP, but it is largely true.

We have now about 35,000 people in South Korea. We believe that with the technology we have that we are a match for the million-man North Korean Army, but if the North Koreans were to launch an EMP weapon, just fire straight up, if you will, and detonate a weapon above the atmosphere, our soldiers would, in effect, be nullified in terms of combat capability than the North Korean soldiers who probably are pretty EMP immune because they do not have very sophisticated equipment.

Terrorist information warfare includes using the technology of directed energy weapons or electromagnetic pulse. This is the Iranian Journal. Terrorists have attempted to acquire non-nuclear radio frequency weapons. This is a statement from the EMP Commission.

So you see that essentially all of our presently believed potential enemies are writing about EMP. It is not that they do not know about it, and my concern is that most Americans do not know about it, which is why we are talking about it.

Why would they be interested in EMP? Again, this is from the commission. States or terrorists may well call EMP a weapon that uses as little as a 50-foot test for EMP test offers the greatest utility. We talk about asymmetric warfare. An EMP weapon is the ultimate asymmetric weapon. One little country with a Scud launcher and a crude nuclear reactor could destroy a nation from which they could launch it, and by the way, we cannot see with our satellites through the thinnest canvas. If the Scud launcher is on the deck and covered by a canvas, we could not distinguish it from baled hay or crates of bananas.

In fact, there is one interesting story on an EMP attack in our country, and this may be kind of a look at the future. It has our country attacked from the sea, and after the weapon is launched, it may well be that even if you find the ships there are no fingerprints. The ship is gone.

Well, these are the reasons they may use EMP. It offers a bigger bang for the buck against U.S. military forces in a regional conflict or a means of damaging the U.S. homeland. There is no way that a nuclear weapon could be used to produce so much damage to our country as with an electromagnetic pulse detection by detonating it at high altitude.

If it took out all of Los Angeles or New York City, you would not have done anywhere near as much damage to our country as simply detonating it above the atmosphere and for using an EMP pulse which would shut down all of our communications and all of our power grids.

Mr. Speaker, think about a world, and it would not be quite this but nearly this, a world in which the only person you can talk to is the person next to you unless you happen to be a ham operator with a vacuum tube set, and then you could talk to another operator who had a vacuum tube set. By the way, the vacuum tubes are a million times less susceptible to EMPs than the microelectronics that we use now. And in this world, the only way pretty much you can go anywhere is to walk unless you happen to have a friend who has a car that has a coil and distributor, and that car probably will work.

The second bullet here is a very interesting one, for two reasons. The country that does this believes they are relatively immune to a massive retaliation with our nuclear weapons. Even if we knew who did it, are we justified in incinerating their grandmothers and their babies because they took out our computers? That is in effect, Mr. Speaker, all they would have done is take out our microelectronics. The consequences of that, of course, are devastating, but the second reason is that we probably would not know who did it.
I cannot imagine, except for Russia, any country that would launch a nuclear weapon from their soil. Our satellites are really good. We would certainly detect it. We would know where it came from, and we would retaliate. If they attack us, it is going to be from the center of the Earth's surface. They are very difficult to monitor. The north Atlantic shipping lanes are crowded with ships. It is essentially impossible to keep track of specific ships in that shipping lane.

EMP could, compared to a nuclear attack on the cities, kill many more Americans in the long run from indirect effects of collapsed infrastructure, power, communications, transportation, food and water.

I was given a prepublication copy of a novel which I hope comes out because I think Americans need to know what the potential is, and it was the story of a community in the hills of North Carolina. The EMP attack blanketed them through the first year; and to give some emphasis to this statement, it could kill many more Americans. This is a novel, but they did a lot of research. They had reason to believe, I think, was probably pretty close to the truth.

If you go to a country that has no communications and no power and will not have any communications or power and essentially no transportation because all of our transportation now except for these old cars and trucks are dependent on microelectronics, the story they told was that at the end of the first year 80 percent of the people in this North Carolina community were dead, most of them from lack of food.

The average city has 3 days' supply of food. If the trucks do not keep coming in over the superhighway, and by the way the serving of food on your plate tonight, the average serving traveled 900 miles to get there, to give you some idea of how vulnerable we are to transportation losses.

They were lucky, because the authors concluded in their book that probably 90 percent of our population would be dead by the end of the year, and in New York City with its millions of people, the novel at the end of the year had them with 25,000 people still alive.

These are unimaginable consequences. The effects could be just overwhelmingly devastating, and a little later I will give you some quotes from some very prominent Americans who understand, and you may be surprised of the source of these quotes when you see them.

Strategically and politically, an EMP attack can threaten entire regional or national infrastructures that are vital to U.S. military strengths and societal survival, challenge the integrity of allied regional coalitions, and pose a threat more dangerous to the high-tech West than to rogue states. Most of these rogue states have little microelectronics. If we retaliate with EMP laydown, they would be a little discomfited compared to the effect on us.

The next chart is an interesting one and far too complex to go through in the few moments we have to look at it here. We are looking at our national infrastructure and the interdependency of the various aspects of our infrastructure.

Their study and conclusions reminded me of the counsel of a very prominent American. There is a number of years ago, Harrison Scott Brown, from CalTech, a geophysicist who I think held a number of seminars called "The Next Hundred Years," and in those seminars, he looked at where the world might be and the various scenarios for the next hundred years.

One of the scenarios was back in the 1960s and 1950s that had been looked at as a nuclear war. He cautioned that recovery from a nuclear war would be very difficult, and what he said then is true today. He noted that our very complex infrastructure was developed through an evolutionary process, through the exploitation of high-quality, readily-available raw materials, iron ore in the Midwest, which was so good that most literally have a backyard smelter. There is still one of those little smelters, by the way, not working of course, just a tourist site now up near Thurmont, Maryland, not very many miles from here.

He cautioned that since our infrastructure was built with these high-quality, readily-available materials like coal that was exposed by erosion of the soil from the coal, oil that was very shallow and very abundant in Pennsylvania, that if our infrastructure collapsed, that we probably could not reestablish it without heavy industry, and heavy industry would have collapsed.

I thought just in the last day or two how I get these little concerns when I thought of this recent big, and it is big but it is not going to save the day, oil find in the Gulf of Mexico. How could you ever drill through 7,000 feet of water and I think about 30,000 feet of soil without the products of heavy industry? You could not, of course, and what this chart shows is that all of our infrastructure, like a house of cards, is interrelated. Any one is pulled out and the rest collapse. Of course, the one essential to everything is power. When that is gone, all is gone. Nothing works.

They spent a great deal of time, and you can get a copy of this report, and you can read the concerns that they have.

One of the few high altitude nuclear detonations, to confuse the EMP, one 300 miles will cover the whole country. Unprecedented cascading failure of our electronics-dependent infrastructure could result. I think, Mr. Speaker, we probably ought to change that verb. It would result.

Power energy transport, telecom and financial systems are particularly vulnerable and interdependent. EMP disruption of these sectors could cause large scale infrastructure failures for all aspects of the national life. Both civilian and military capabilities depend on these infrastructures without adequate protection, and they have not been essential. None, Mr. Speaker. Without adequate protection, recovery could be prolonged months to years.

Mr. Speaker, you cannot hold your breath for months or years. Now, all of this comes from the EMP set up by Public Law 106-398, title XIV. These are not my words. These are the words of the people from the EMP Commission.

The next chart, again directly from the commission, says that EMP is one of a small number of threats that may, and, boy, are they capable of understatement. These are scientists primarily, and scientists are not preachers or politicians. They are given to understatement. EMP could result in a small number of threats that may hold at risk the continued existence of today's U.S. civil society. That is the way of saying, Mr. Speaker, that EMP could destroy our civil society. What they say is "hold at risk the continued existence." That means discontinue the society, disrupt our military forces and disrupt our ability to project military power.

Far too many of our weapons systems are not hardened. At a series of hearings over the last several years, I have frequently asked, after a robust EMP laydown, how much of our war fighting capability remains? And the short answer is, usually not much.

Now, that is about to change, because I now understand that a memo is circulating in the Pentagon asking all of our departments there to make an assessment of their EMP vulnerabilities. Hopefully, that will result in a program to correct this deficiency.

The number of U.S. adversaries capable of EMP attack is greater than in the Cold War. Then there was one. Today, who knows how many there are. Any country that has a crude nuclear weapon that they might make or buy, a Scud launcher and a transsteamer they can put it on is capable; not of blanketing our whole country, but taking out the whole northeast and Mid-Atlantic area would be devastating. This would be orders of magnitude greater than Katrina, and we still really haven't recovered from that one.

Potential adversaries are aware of the EMP strategic attack option. I read earlier a number of quotes from the commission, from journals in these foreign countries noting that they really are aware of it, that they do not interpret not adequately addressed in U.S. national and homeland security programs. I said, Mr. Speaker, they were capable of gross understatement. We are paying essentially no attention to it.

Now, probably not going to burn down, but I wouldn't sleep well tonight, I wouldn't sleep tonight if I knew that I didn't have fire.
Mr. KYL. Mr. Speaker, we have spent several minutes now talking about a threat which I suspect few listeners had any idea existed. I hope that quoting this report and high profile people like Jon Kyl has convinced the listener that such a thing is not just possible, but there a real possibility indeed.

If there is going to be a conflict, Mr. Speaker, with these powers, I think it is more than a possibility. I think it is a probability that any of these small activities that have a nuclear weapon could devastate us more with an EMP laydown than with any other use of that weapon. And the reason I am here in this time that we are talking about national security, Mr. Speaker, is because I believe that, although there are millions of concern about national security, like an open border through which 11, 12, 20, who knows how many million illegal immigrants could come,
there could just as well have been that many terrorists. By the way, there is an old adage that talks about the tyranny of the urgent.

Iraq and what we are doing there is really urgent. Every day it is on the President’s plate. The border and the real outrages of American citizens that we haven’t been able to close that border is really urgent. And it is just a truism for families, for businesses, for countries, the tyranny of the urgent. The urgent always sweeps the important off the table. And one of the really important things that we need to be about is preparing for the eventuality of an EMP laydown.

My last chart is a kind of a colorful one. This is a satellite photograph of the Ural Mountains, and it is labeled the Yamantau region in Russia. And this facility is ordinarily spoken of as Yamantau Mountain because it is in a mountain, and you can see from the figure down in the lower right there, it is about 600 miles almost due east of Moscow in the Ural Mountains.

Beginning with Brezhnev, in about 1980, the Soviets, and now the Russians, have a closed city there. In our liaison with the Russian Duma, we have been fairly friendly with a number of those Duma members, our counterparts there, and we asked them about closed cities. And they say, oh, yes, we have closed cities. When you draw a map of the region, the city is not even on the map. It is closed. People don’t go unless they are needed to work there, and they do not leave there unless they are no longer needed there.

Mezhgorye is the closed city. It happens to be in two little pockets in the mountains, because one valley wasn’t big enough to house it, but there were at one time 60,000 people that we could estimate from our satellite living there. That would be about 20,000 workers that were working on Yamantau Mountain.

Yamantau Mountain is the largest nuclear secure facility in the world. We have had two defections from that Yamantau Mountain. They each have told us what they know.

What we know from what they told us is that it is enormously large, as large as inside our beltray; it has train tracks running in two directions, so they intend to move a lot of material; and it has enormous rooms carved out of soft rock beneath hard rock. It is an ideal geologic formation for producing this kind of a facility.

The people at Mezhgorye, since they are finished digging, has now shrunk to about 15,000, as our satellites indicate, which means there are about 5,000 working at Yamantau Mountain.

What are they doing there? By the way, this is so secret in Russia that the cost of this, which has to be enormous, does not show in the financial lines of any of the ministries. It is the equivalent of our black programs, for those of you who are familiar with black programs.

To give you some idea how important this is to the Russians, continuing work on Yamantau Mountain is more important than paying their military officers, because they have continued work there when they couldn’t pay their military officers. It is more important to them than the $200 million for the service module on the International Space Station, which is embarrassing to them when they couldn’t fund that and we had to fund the service module, which was their responsibility, on the International Space Station.

Now, there is no conceivable use of Yamantau Mountain except during or after a nuclear war. This kind of gives you a little opportunity to get into the heads of the Russian leaders. From their writings and from their actions, it is quite justifiable to draw the conclusion that they believe that nuclear war is inevitable and winnable.

Now, I have no idea, and I have had a number of classified briefings, I have no idea what they do in Yamantau Mountain. But one thing is certain, it has no use except during or after a nuclear war. I wanted to end with this, Mr. Speaker, to bring the message that nuclear war is not unthinkable and therefore it will not happen, because apparently the Russians do not believe that it is unthinkable.

By the way, they span 11 time zones. Their enormous country goes almost halfway around the world. They have less than half the people that we have and a geography that size, I think only six cities of more than 1 million people. And if wealth is determined by natural resources and raw materials, Russia is the wealthiest country on the globe. They have everything their heart could desire, except a rational government, their heart could desire for a robust economic system. They could close the door and with their resources live happily ever after.

Almost nobody else can do that. We cannot do that. We import about two-thirds of our oil, we have no diamonds, nickel, chromium, tungsten. You would not have these lights in the ceiling without importing things.

So I just wanted to end, Mr. Speaker, with this chart which shows that our potential enemies believe that there could be a nuclear war and they are preparing for it by spending money on Yamantau Mountain, scare money.

They were doing this, by the way, when money was scarce. It is not scarce now. They are awash in cash because oil is $75 a barrel. But they were spending money on this before they were flush with money.

So my hope is, and I believe we should have time, that the American people in our society and in our military can plan, adapt, design, build, so that we will be immune.

We are much more likely to have this attack if we are vulnerable to the attack, and at the moment we are explicitly vulnerable. We don’t need to be that way. The creativity and ingenuity of the American people can make us essentially immune to this, Mr. Speaker, and we need to be about it.

BIG-GOVERNMENT SOLUTIONS DON’T WORK

The SPEAKER pro tempore. Under the Speaker’s announced policy of January 4, 2005, the gentleman from Texas (Mr. PAUL) is recognized for 60 minutes.

Mr. PAUL. Mr. Speaker, politicians throughout history have tried to solve every problem conceivable to man, always failing to recognize that many of the problems we face result from previous so-called political solutions.

Government cannot be the answer to every human ill. Continuing to view more government as the solution to problems will only make matters worse.

Not long ago, I spoke on this floor about why I believe Americans are so angry in spite of rosy government economic reports. The majority of Americans are angry, disgusted, and frustrated that so little is being done in Congress to solve our problems. The fact is, a majority of American citizens expect the Federal Government to provide for every need without considering whether government causes many economic problems in the first place.

This country is an ineptness for politicians to embrace the role of omnipotent problem-solvers, since nobody asked first whether they, the politicians themselves, are at fault.

At home, I am frequently asked about my frustration with Congress since so many reform proposals go unheeded. I jokingly reply, No, I am never frustrated because I have such low expectations. But the American people have higher expectations, and we are forthcoming beyond frustrated with their government.

If solutions to American problems won’t be found in the frequent clamor for more government, it still is up to Congress to explain how our problems developed and how solutions can be found in an atmosphere of liberty, private property, and a free market order.

It is up to the American people to demand radical change from our failed policy of foreign military interventionism. Robotic recombination cliches to other government intervention in our lives are unbecoming to Members who are elected to offer ideas and solutions. We must challenge the status quo of our economic and political system.

Many things have contributed to the mess we are in. Big government management can never compete with the free market in solving problems.

Central economic planning doesn’t work. Just look at the failed systems of the 20th century. Welfarism is an example of central economic planning. Paper money, money created out of thin air to accommodate welfarism and government deficits, is not only silly;