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Worthington Essay Competition 2010

Mr. President,

When you began your first term of office, your goal was to alleviate our dependence on foreign oil and coal supplies through the construction of nuclear power facilities. Because of your initiatives, our economy has expanded on many dimensions: new manufacturing plants have opened to produce the necessary goods from construction materials to scientific equipment. In addition, growth in the electric industry has produced more jobs to update power grids to smart grids and to install GE WattStations to facilitate the purchase of electrical cars (“Charging”).

Almost the entire nation now runs on electricity produced on our own soil, by our own people. But there’s the rub: when the power plant in Nevada malfunctioned and subsequently exploded, it was our own people who perished, and who suffer the radiation damage to both their bodies and their homes. Which brings us as the leadership of this nation to a critical decision: can we, in good conscience, continue to construct more nuclear power plants when the potential risks in economic costs and human costs are so obviously before us? I believe we can, though not without some precautions in how we handle nuclear power and the diversification of our energy sources.

There are four nuclear power plants scheduled to go online by the end of this year. This close to completion, we have invested upwards of \$15 billion in each plant, with total costs above \$75 billion for all four sites (Schlissel 9). While I understand that this cost is just over a quarter of the projected economic impact of the Nevada disaster, ceasing construction on these plants would only add that cost to the national economic impact, not to mention the impact on local communities of lost wages in future jobs. This would push the total economic impact of the

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disaster to well over \$350 billion, which is unthinkable. In addition to damaging the four local economies of the canceled sites, the nation would have to revert to the coal and oil reserves, which predictions have shown will only last eighteen more months. At the end of those eighteen months, with no other source of fuel for energy, the country would have to return to purchasing oil on the national market at prices well beyond the last time oil was purchased en masse. That sort of increase in electricity costs, now that more of our daily lives are dependent on electricity, could ruin the national economy and send us into a depression not seen since the 1930s. It just doesn't make sense to add to the total cost of the disaster and run the risk of crushing the national economy.

At the risk of sounding callous, I would also like to point out that the U.S. now has approximately 80 active nuclear power plants on its soil, some of which have been in operation for almost forty years. During that time, we've only had five nuclear accidents (including this most recent meltdown in Nevada). That's approximately 6.25% of our total reactors that have malfunctioned, and none of the previous incidents have caused the permanent shutdown of the reactor; in fact, even the Three Mile Island plant in Pennsylvania is still active, and it was the site of the worst nuclear accident in the US until now. My point being, that as this industry grows, it's safety regulations have kept the vast majority of our citizens safe. The odds speak for themselves- the probability of an accident of this severity happening again is unlikely.

This is by no means to say that I don't realize the risk to hundreds of thousands of human lives. Nineteen people perished in Nevada, and there are 143 ARS cases, which could lead to more deaths over time. That cost of human life is not insubstantial, and must be taken into account as we make a decision about the future of nuclear power. Additionally we must calculate the number of future cancer deaths in the area, as well as the effect of radiation on livestock, crops,

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and wildlife. The disaster forced an evacuation of over 12,000 sq. miles of land, only some of which will be inhabitable again relatively soon. But our estimates are still vague in regards to the areas with heavy fallout: some areas could remain under quarantine for years. If an accident of this magnitude were to happen again, but in a more populated area or an area of farmland, the impact could be much more severe. Thus, while in the immediate situation we must look at the larger picture of supplying energy for 300 million people, I suggest that we place a moratorium on all plants slated to go online after the end of this year. The four plants nearing completion are part of the original fifteen plants included in your initial energy bill from your first term (one private company failed to secure the necessary funding). The next set of plants from your second energy bill aren't slated for completion until 2023, thus the financial loss of suspending construction is comparatively low.

In addition to this measure, I urge you to create a committee of scientists, power plant presidents, and experts from the Department of Energy to investigate the Nevada disaster. The industry, as well as the nation, needs to know exactly what happened and what went wrong. I do not suggest this in an attempt to assign blame to any particular individuals or plant owners; rather, I suggest this so that we can learn from their actions and the mechanical failures to improve the safety of our existing plants. Additionally, I intend to head a committee of safety experts from the Department of Energy and plant operators to evaluate the industry's numerous safety regulations, particularly the ones surrounding the equipment and processes that led to the meltdown in Nevada to determine what can be changed, updated, or added to improve the safety of plant workers and decrease the risk of system failures.

Lastly, as our country continues to grow and demand more power, I suggest we diversify our energy sources. We should encourage the research and development of sustainable, renewable

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energy sources. The technology for solar energy has existed since the 1880s, and yet we still lack an efficient system for converting heat into energy: the current designs for photovoltaic cells are only slightly more efficient than the cells at the turn of the millennium which had an “18.8%” efficiency rate (Solar). New developments in floating wind turbines have had great success off the coasts of West Africa and Peru, and yet we have not invested in any, even though we have far more coastline. These are intermittent power sources though, and that could create problems. We need to find effective and efficient ways to store the energy for unproductive days. Another possible source of energy is the biological hydrogen production, which uses photosynthetic bacteria to break down the molecules in water without creating a carbon byproduct (Lee). In addition to their environmental-friendliness, these possible sources of energy do not require a purchased fuel source and their potential for danger is relative to any other mechanical system, as opposed to the hazard of nuclear fuel.

Therefore, Sir, I urge you to consider my proposal. Economically, it does not make sense to make the problem worse by adding to its total financial loss and risking far more wide-spread economic depression by returning to fossil fuels. We can finish what you started with the first energy bill and provide for our country’s immediate needs, and then turn our attention to renewable energy sources which pose much less danger to our citizens, and provide a long-term solution to the economic risks associated with nuclear accidents. In this way we can both provide the necessary energy our population demands and still strive to keep them safe while doing so.

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