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SHORT Statement of Mary Olson, August 31, 2010 Blue Ribbon Commission on America's Nuclear Future subcommittee on Reactor & Fuel Cycle Technology

NIRS was founded in 1978 by grassroots activists fighting the construction of nuclear facilities in their communities. They wanted a "national office" to network among them and monitor congress, the courts and federal agencies to share nuclear information. NIRS has members in 50 states, with a disproportionate base in commercial reactor, dump and proposed-dump communities. We are activists and many of us (specifically) know we have been exposed to radioactivity from special nuclear materials at work or in some cases, at home. NIRS members and staff are monitoring, and networking information from the BRC, and many have already contributed comments – more certainly will.

As a community we had high hopes for this time – we thought we would live to see the last nuclear reactor closed – and the last nuclear weapons factory shuttered – we contribute to the "common defense and security" of our nation and the world by working toward the **peaceful** end of the Nuclear Age, in concert with other folks around the world. Our hope is that when the production of more radioactive waste finally comes to an end -- that is the only real radioactive waste solution -- we could all join hands and work together to find the best way to live with the enormous radioactive legacy already in existence. In the 1990's when the nuclear industry had the "clutch in," we called for a Blue Ribbon Commission but it was **not** on America's Nuclear Future rather, on a nuclear past! Regardless, we are here today because of the Atomic Energy Act:

> "Chapter 1…The processing and utilization of source, byproduct, and special nuclear material must be regulated in the national interest and in order to provide for the common defense and security and to protect the health and safety of the public. "

I know that none of the Subcommittee members have training in medicine or health; I also imagine that you have some level of confidence about radiation – are likely comfortable with the idea that radiation is a risk that is "manageable" – otherwise you would not serve on a subcommittee dedicated to a "nuclear future." At the same time, you have heard that there is "no safe dose of radiation." That statement not only comes from people like me – it is enshrined the Environmental Protection Agency's radiation standards; implied in the NRC's Part 20 and ALARA regulations – and upheld by the National Academy of Sciences Biological Effects of Ionizing Radiation reports. The problem is that many of you (likely a high percentage with engineering backgrounds) assume this statement is simply "a robust margin for error" rather than a fact.

I am a biologist – and have been tracking the new molecular research on radiation health effects closely. As you know, radiation impacts our cells. In the case of extreme exposures – acute radiation syndrome is literally cooking of our cells – about like putting a puppy in a microwave. At lower doses, the impacts are more subtle – tracks in cytoplasm, broken chromosomes, damage to other cellular structures and tearing of the membrane. Mortal damage to a cell is less worrying than smaller hits – a dead cell is not going to trigger cancer, or a deformed off-spring. It turns out that the statement that "all it takes to initiate a fatal cancer is a single cell and a single radioactive decay" is true – does it happen every time? No. Does every radiation exposure bear the possibility? Yes. There is no safe dose – and it matters that children are the most vulnerable (many times more vulnerable than the "reference man" the public regs assume).

Why bring this issue to the reactor and fuel cycle subcommittee? Because plutonium and its yield of fission products is worse -- more deadly than uranium – and it is not a small difference – it is substantial. At one time those of us exposed to radiation allowed that this was all a big "mistake" – but now we know; all of us.

When some one knowingly puts radioactivity in water – and a Russian spy drinks it – there is a murder investigation. Most industrial nuclear operations knowingly put radioactivity in water (federal standards allow this even though there is no safe dose) with immunity…for example, more than 100 reactors in the US and every closed so-called low-level waste dump have contaminated ground water. There IS no safe dose – this is a fact. Contamination was not "supposed" to happen…it did. Doing it again will not be a "mistake" and NIRS members will not be what we see as accessory to the harm that will result from this intentional act.

1) What role should local communities and governments play, if any, in the development and demonstration of new nuclear technologies? ANSWER: No elected official should back a program that would result in a doubling of fatal consequences to his or her constituents. 2) With respect to nuclear reactors and fuel cycle facilities, what are the key safety, environmental and security concerns for local communities, and how should these be addressed? Stop making more waste – zero release standards for what is already there – combined with HOSS – see: http://brc.gov/e-mails/May10/HOSS_PRINCIPLES_3_23_2010x.pdf