HB 2215 Expanded version of my Oral testimony – February 20, 2023

Chair Marsh, Vice Chairs Levy & Levy, members of the committee

I am Dirk Dunning, a resident of Salem, now retired. I was a Registered Professional Chemical Engineer, formerly licensed Nuclear Power Engineer, and 25-year veteran of the Oregon Department of Energy, where I was the senior technical and policy analyst on such matters.

I speak today in opposition to HB 2215 and its companion bills in the Senate.

No bad idea ever dies. Eliminating the requirement of a having a licensed high-level nuclear waste repository before siting any new nuclear is a bad idea. So too is the idea of building new nuclear reactors in general.

Before referring this measure to the public, the legislature should direct the State Energy Department to perform a detailed technical, financial, risk and policy analysis of all aspects of the proposal that broadly engages our citizens to provide the legislature and the public the background needed to properly assess such a proposal. The proponents and Oregon State University are financially and otherwise conflicted. They can play and should no role.

Nuclear power has a severe waste problem. We are no closer to siting a high-level nuclear waste repository today than we were at the start of the nuclear age 80 years ago. There is no reasonable possibility that such a repository will be approved in the next decade.

Nuclear is a severe financial gamble. Nuclear is incredibly expensive and imposes immense long term financial liabilities on future generations that receive no benefit from them. By this I don't mean our grand children, or the seven generations idea. I mean much longer. Far longer than the mere 10,000 or so years that civilization has existed. The wastes already accumulated will remain dangerous for about as long as Homo Sapiens has

existed as a species. Let that sink in. We cannot even begin to do an adequate assessment of the long-term costs and impacts this imposes on humanity and upon future generations into that impossibly far distant future.

Nuclear power has a long history of severe accidents and close calls. Every nuclear power reactor designer believed they solved ALL important safety issues. They were wrong with the first power reactor, Experimental Breeder Reactor-1, and every major reactor type since. They were catastrophically wrong with Chernobyl and Fukushima.

We have no reason to believe these designers have solved all the hazards these reactors pose. As recent years have shown us, hostile attacks on these reactors and their infrastructure are now an all too real risk and must be included in any safety analysis.

Nuclear can play no meaningful role in fighting climate change. We must act urgently. New nuclear plants simply cannot come on-line in time to make any meaningful difference at all.

Nuclear cannot economically compete with solar, wind or hydroelectric power either for variable or base load power. Every cost assessment has been and will remain a low-ball estimate until after a high-level nuclear waste repository has been in operation for a few decades. The costs detailed by such estimates focus on the financial costs. They often seriously discount or entirely ignore the human and environmental costs. And even the financial costs are severely discounted by invalid application of future cost analysis when no declining fund exists to pay those costs. Instead the unpaid costs and impacts accumulate with time and the true costs rise over time.

Former President Jimmy Carter – a great man, is home in hospice today in Plains, Georgia at the end of his days. Just over 70 years ago, two years before I was born, Lieutenant James Carter was dispatched by Admiral Hyman Rickover to lead a team of US Navy sailors to shut down the NRX Reactor at Chalk River, Canada, the very first nuclear reactor to suffer a

partial meltdown. Carter and his team took seriously high radiation exposure and risk. They succeeded. I asked the committees indulgence to take a moment to honor Jimmy Carter and his men. They served in the very highest traditions of our nation, of the US Nuclear Navy, and of humanity.

I am saddened that the committee did not take this opportunity to honor a great man.

I would also note that the committees use of timers in the way they were used was both highly inconsistent, and strongly biased toward the proponents and against the public. This is most unfortunate and should be corrected. If the legislature is to be fair, proponents, opponents and others should all face the same limitations. And they should be intermingled randomly.

While working for the State I stopped such unfortunate behavior by the Federal Government by telling the assembled citizens who had often travelled great distances to talk to the agencies that I personally would remain to hear and accept the testimony of our citizens, no matter what that testimony was and for as long as they wished to comment. We, all of us, stayed until 2 or 3 in the morning hearing the concerns of our citizens on more than one occasion. Doing that greatly improved the process.

I have 25 years of direct experience in the precise issues involved before the committee with this proposal. That ranges from directly operating such a “small” reactor, the history of so-called “small” reactors from their inception with the dawn of the nuclear age through today, with their failures and problems; and with major power reactors, with Trojan where I interviewed for a job and was not called back when I pointed out that they had a several hundred gallon per day leak from the primary into the secondary systems; with Columbia Generating Station where I was lead technical support for Oregon in any nuclear casualty involving the reactor for 25 years, and extensive history and involvement in the siting of nuclear waste disposal sites and improper disposal.

I was personally invited by the Ukrainian Parliamentarian and head of the "Permanent Commission for the Study of the Chernobyl Disaster" Volodymyr Shovkoshytny to tour directly through the destroyed core of Chernobyl Unit 4 in the late 1990s. I declined. I helped them meet with the managers and scientists at Hanford to explore ways to make RBMK reactors safer with the help of the then Richland Field Office manager John Waggoner.

I also have a rather interesting history involved with Fukushima Daiichi and the failure of the nuclear engineers there and here to actually understand what their actions in responding to the accident caused, and how that made the problems and outcomes exponentially worse; how salt from ocean water precipitated in the reactor, heating the fuel, and catastrophically corroding both the fuel, and the reactor vessel. And oh so much more.

Despite this long and storied history, I find it most saddening that the committee chose not to ask even a single question. I can only hope this implies that the committee sees the utter folly in the proposal and will reject it, as you should.

Should any of the committee members have any question as regards my understanding of the issues involved, or my own history with the State and the "cleanup" ('filthy-down' actually) of Hanford, I am happy to discuss them with you.