Class:

I wish to respond to the following important comment in yesterday's class chats:

"With the Nuclear plants in Illinois closing like Byron and Dresden, what are the prospects of Nuclear power in Illinois and the whole country? Seems there is an agenda against nuclear power in the US"

The US has an aging fleet of reactors – about 91 still in operation. The fleet is old with a large portion of the reactors over 40 years of age. There are already additional planned retirements including the last two operating reactors in California at Diablo Canyon, near San Luis Obispo. The nuclear economics are far from healthy and so many plants cannot survive without some form of subsidies. The State of Illinois has already "bailed out" Exelon on the losses suffered by the Clinton and Quad Cities plants with a law that reimburses Exelon 235 million dollars annually. The alarm on the Dresden and Byron plants may be interpreted as a call for similar help by Exelon. However, notwithstanding Gov. Pritzker's plans to transition Illinois to 100 % CO_2-free electricity, the reception in 2020 may be different than it was during the Rauner administration. Indeed, there are moves in the Springfield legislature to require a sale of the units rather than simply closure. There is no doubt that nuclear units are important contributors to CO_2-free electricity and nation-wide as you can see from slide 104 in Lecture 1, the nuclear resources contribute 20 % such electricity, which exceeds the 17. 5 % provided by renewable generation resources. You can also see the fact that current nuclear costs cannot compete with the very low solar LCOE, as shown in slide 113 of Lecture 1. I am not aware of an "agenda against nuclear power in the US" and, indeed, for DoE the continued contribution of nuclear is very important. I became quickly aware after I entered the utility industry that the utility industry was doing a poor job to sell the safety of the nuclear plants in the US with the strong reliance on the Rasmussen report issued in 1975. For many people the nuclear issue became too emotional and the low probabilities, notwithstanding, each person viewed themselves as a potential victim of a nuclear mishap. The sequence of nuclear mishaps at Chernobyl, Three-Mile Island and more recently Daiichi Fukushima certainly caused further damage. While so far US stopped short from the mistakes of European nations, e.g., Sweden to ban nuclear production, many states have enacted legislation to continue support of nuclear plants along lines similar to those of Illinois, since no governor wants to be faced with the closure of a plant and the implications on jobs, the local tax base and the state economy. However, we are struggling to complete the construction of the last nuclear plant with huge cost overruns already.

The tide is turning with the developments of the small modular reactors (SMRs) and there are plenty of small start-ups ready to launch their wares on the market. However, the nuclear energy is the most strictly regulated industry, even more so than the Food and Drug Administration for the approval of new drugs, which you have been exposed to in the current Covid environment. Indeed, if you wish to learn more about the micro-reactor of the SMR variety, there is a public forum on campus in which you may participate. **The forum is Thursday Sept 10 at 4:30 – 6:00 p.m. and you can join via Zoom:**
Please click the link below to join the webinar:
https://illinois.zoom.us/j/91616682742?pwd=Yk1sQm1YdVQxN0MzalIyRjhPNHZiUT09
Password: iS33ch4t