

# “NUCLEAR ILLINOIS” FACTS - 2015

## **Reactors:**

- Illinois has more nuclear reactors than any other state -- 14 total; 11 operate, 3 are closed permanently (Dresden 1, Zion 1&2) due to contamination and facility degradation. All are owned/operated by Exelon Generation, the largest private U.S. nuclear power company. The operating reactors have a capacity to produce up to 11,809 mega-watts (mW) of power.
- If Illinois were a nation, it would be the 11<sup>th</sup> largest nuclear power in the world, behind Ukraine.
- Exelon Corporation formed in 2001 with the merger between Unicom of IL and PECO of Pennsylvania -- putting 23 of 99 U.S. reactors under one large, extended corporate umbrella. Exelon now owns and operates 17 of these; 5 others are permanently shut. In 2012 Exelon merged with Constellation Energy, adding an 5 more reactors to the company's inventory, representing >19,000 mW of nuclear-generated power.
- Exelon's Dresden 2 & 3, and Quad Cities 1 & 2 reactors are the same design and slightly older than the 3 GE reactors that blew up and melted down in Fukushima, Japan, in 2011.
- Exelon has received 20-year rubber-stamp operating license extensions from the federal regulators at the NRC for its aged, decrepit Dresden 2&3 and Quad Cities 1&2 reactors – historically among the oldest, most fined, poorest performing reactors in the nation; and submitted 20-year license extension applications for its Byron 1 & 2 and Braidwood 1 & 2 reactors in late 2013.
- Exelon threatens to close 3 - 5 reactors in Illinois it claims to be “uneconomic.” The *Chicago Tribune* reported that no reactor in Illinois has turned a profit the last 5 years.
- Exelon has threatened to close up to 5 Illinois reactors and terminate 2,300 employees if the Illinois Legislature does not approve a bill Exelon drafted that would force ratepayers to give Exelon \$1.6 billion over the next 5 years. Their bill would also stifle renewable energy and efficiency programs which supporters claim would create up to 32,000 jobs annually.
- At normal airliner cruising speeds, Illinois reactors (and their much more vulnerable “spent” nuclear fuel pools) are between 6-28 minutes from O'Hare Field - the world's busiest airport – a significant fact in the post-9/11 world.
- In case of a serious nuclear power accident *anywhere* in the U.S., Illinois 14 reactors could be assessed up to \$140 million/year for 7 years to finance resulting liability payments.
- Illinois reactors have been fined by the NRC over 100 times, for nearly \$8.5 million for violations of federal regulations and poor operating practices.
- According to a December 3, 2003 report by the GAO, Exelon's Dresden 1 and Zion 1&2 Illinois reactors may not have sufficient funds accrued in trust to cover “expected baseline” costs of closure (reactor “decommissioning”). Five of Exelon's non-Illinois reactors will have insufficient funds. If economic forecasts are wrong, Dresden 2&3 and Quad Cities 1&2 may also have insufficient funds. Taxpayers and ratepayers -- *beware!*
- According to *Crain's Chicago Business*, utility de-regulation in the late 1990s gave Illinois nuclear utilities \$6-\$11 billion in “stranded cost” recovery payments because of *excessive* nuclear reactor construction. The current Exelon bailout legislation would therefore be the third time Illinois ratepayers would be forced to pay Exelon for these reactors.
- Exelon/ComEd lobbyists have a history of *bitterly and repeatedly opposing* legislation to establish an Illinois “renewable energy portfolio standard” (RPS); and after joining a voluntary state RPS program in 2004, ComEd/Exelon withdrew in 2005. They blocked important state wind power and RPS legislation in 2010, 2014 and 2015; and opposed renewal of the wind production tax credit at the federal level in 2012, which was making wind power cheaper for customers than

power generated from Exelon's nuclear plants. Exelon was thrown out of the American Wind Energy Association for this opposition.

- In 2007 Exelon announced plans for the early “decommissioning” (tear-down and removal) of the two shuttered, contaminated Zion nuclear reactors on the shore of Lake Michigan. The economic collapse put this plan on hold; but work began in 2011. Since the project started, the parent company of the subsidiary Exelon chose to perform its “model decommissioning,” was near bankruptcy, changed 3 CEOs, 2 CFOs, and the project manager once, and only in 2013 hired an auditor for the \$860 million project. No independent public review of expenditures exists or is permitted by the contractor, Zion Solutions. Illinois state officials at all levels have been appraised of this situation, but have taken no positive action to rectify the situation to date.

### ***Radioactive Wastes:***

- Illinois produces more “spent” nuclear fuel (“high-level” radioactive wastes, HLRW) each year than any other state, adding approximately 300+ tons per year of new HLRW. Exelon's Illinois reactors have produced ~10,000 tons of “spent” fuel to date, all stored onsite at each reactor.
- Congressional legislation calling for “centralized interim storage” (CIS) of HLRW away from reactor sites has the potential of bringing an additional 9,000+ tons of spent fuel to Illinois, to be stored here up to 35 years, perhaps indefinitely.
- The Fukushima Daiichi nuclear catastrophe showed how vulnerable the spent-fuel pools (built above ground) are for that reactor design, which is also in use at 4 Illinois reactors.
- Illinois has the only de facto HLRW storage site in the country -- the General Electric Morris Operation in Morris, Illinois, which holds 772 tons of “spent” nuclear reactor fuel.
- The Zion NPP decommissioning project will leave over 1,000 tons of HLRW containing >203 million curies of radioactivity in 2,303 fuel assemblies onsite in 61 dry-cask canisters, costing ~\$1 million each to construct. Over 4 million ft.<sup>3</sup> of LLRW will be shipped by train to Clive, Utah for disposal. Eventually, ALL Illinois reactors will meet similar fates.
- In 2013 federal courts ruled that the Nuclear Regulatory Commission had no factual justification for claiming “waste confidence” that spent fuel could be stored at reactor sites indefinitely. The new Waste Confidence Rule was released by NRC in late 2014, without addressing the courts' concerns, and was renamed the “Continued Storage of Spent Nuclear Fuel” Rule, implying the NRC does indeed intend to store HLRW at reactor sites indefinitely.
- According to a 2009 DOE report, if “spent” reactor fuel shipments had begun to the cancelled, flawed Yucca Mt., Nevada radioactive waste repository, Chicago would have seen 25% of all rail shipments (~2,400 casks on ~800 trains) and 54% of all truck shipments (>1,400 trucks) pass through the area. Some members of Congress want to restart the program at the geologically unstable Yucca Mt. site.
- Illinois is usually among the top 5 US producers of so-called “low-level” radioactive wastes (LLRW) each year. Annually over ~99.3% of the radioactivity from LLRW generated in Illinois comes from Illinois' 14 nuclear reactors.
- In 2007 General Electric and Argonne National Laboratory bid on contracts to “reprocess” irradiated (“spent”) nuclear reactor fuel in Illinois as part of the federal government's now-defunct Global Nuclear Energy Partnership (GNEP) program.
- Radionuclides are migrating underground from burial trenches onsite at a closed low-level radioactive waste dump at Sheffield, IL.

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