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NAWO NEWS

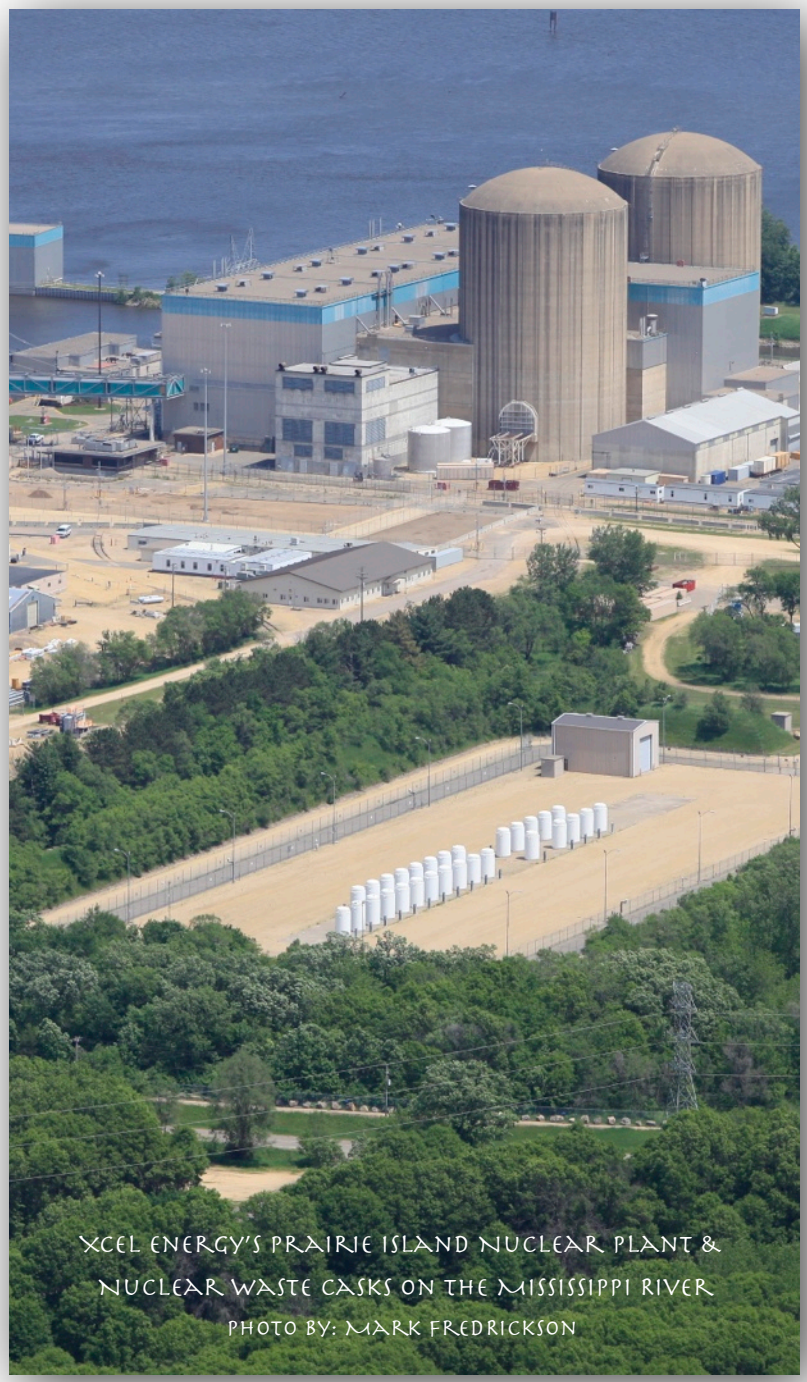
Prairie Island Special Edition

SERIOUSLY, SAYS XCEL ENERGY, THERE IS NO THREAT

What is going on at Prairie Island? There's been one screw-up at the plant followed quickly by the next for the past many months. Makes you wonder when the BIG one's coming. At a minimum, we would do well to reflect upon the recent acknowledgement of Japanese Prime Minister Yoshihiko Noda. He said on March 2, 2012 that the government shares the blame for the Fukushima disaster because officials had been blinded by a false belief in the country's technological infallibility. From our perspective, that is just one of several intertwined false beliefs required for continued commercial nuclear operations.

Another would be the false belief that the Federal Government and nuclear utilities can operate a waste management program that will not fail for 240,000 years. Another would be the false belief that it provides a cost-effective product, which actually turns out to be true with the corollary supposition that anything is cheap for those who don't pay for it. Another, the subject of this article, is the false belief that radiation releases to the biosphere cause no biological consequences so long as those releases are within regulatory limits. With that in mind, here's a partial list of recent fallibility at Prairie Island.

Event that was **UNMONITORED.** Between November 22, 2011 and November 29, 2011, breaking reactor parts (condensate pump) caused an unscheduled release of about 3,900



XCEL ENERGY'S PRAIRIE ISLAND NUCLEAR PLANT & NUCLEAR WASTE CASKS ON THE MISSISSIPPI RIVER
PHOTO BY: MARK FREDRICKSON

gallons of radioactive Tritium water, containing radiation that was calculated to be 9,430 pico-curies per liter. There was an admitted potential for this Tritium laced radioactive water to enter the environment where it could reach the groundwater, according to the event report.

Event on January 5, 2012. Breaking reactor parts caused a sodium hypochlorite leak resulting in airborne chemical concentrations that the Nuclear Regulatory Commission (NRC) identified as being dangerous to life and health. An alert was declared and school therefore started late for some area children.

Event on February 6, 2012. The condensate pump again failed and dumped 27 gallons of Tritium with 15,000 pico-curies per liter concentration onto the Earth**.** Methoxy-propylamine, ammonia, and hydrazine were also released.

Xcel Energy, which owns and operates the Prairie Island reactors, was finally forced to acknowledge the leakage between 11/22 and 11/29/11 after NAWO clued the 5th Estate into this Feb. 6 event. In response to the adverse publicity, Xcel personnel got a letter into the 2/15/12 St. Paul Press referring to these events, stating that, "Xcel Energy takes seriously our responsibility to operate our nuclear plants safely and to protect public health and the environment."

Event On February 18, 2012. The St. Paul Pioneer Press reported an unspecified but elevated security violation that occurred on October 28 at Prairie Island. Xcel released another statement saying "security and safety at our nuclear plants are our highest priority, and we take this matter seriously."

Event On February 21, 2012. Unit 2 had a SCRAM, which means an emergency manual shut down. SCRAM stands for Safety Cut Rope Ax Man, from the early days of nuclear power when they had a guy standing ready with an ax to cut a rope when something went wrong. Cutting the rope would release control rods into the core to stop the chain reaction in their primitive reactors. The acronym stuck. The SCRAM was caused by a feedwater heater problem that, no doubt, Xcel took seriously.

Event On March 6, 2012. Reactor coolant levels in Unit 2 were identified by workers to be decreased indicating an increase in coolant system leakage, triggering the declaration of an "unusual event" that, according to officials, poses no threat to public safety.

Monitoring equipment capable of providing real-time data that defines radiation dispersion patterns is readily available. This became abundantly clear when US Environmental Protection Agency and media reports of the Fukushima plume were released to the public.

There's quite a list of safety violations, little nagging violations, but there were twenty of them from April 7 through December 31, 2011. Some days were worse than others. On September 30, five separate actions were listed on the NRC safety violation list. June 30 was the worst day with 7 safety violations reported, all taken very seriously, of course.

During this period there has also been a series of reported events at Monticello, Xcel's other nuclear plant. Among then, on 10/18/2011 Xcel had to fire a couple on-the-job drunks. On 2/29/12, the St. Paul Pioneer Press reported that for years, Xcel has been

ignoring the fact that emergency sprinkler systems are corroded shut and would be inoperable in the event they were needed.

On top of all that, between March 7 and March 12, 2010, a valve failure at Prairie Island caused an "abnormal release" of about 10,400 gallons of tritiated water into the Mississippi River. Xcel produced documents about this release and reported it to the NRC, but we only learned about it when we recently happened to review the 2010 Annual Radioactive Effluent Release Report (most currently available) in which the event was mentioned. We called the NRC to get more information and Prema Chandrathil at the NRC told us that only Xcel, not the NRC, could provide us with that plant document information, and that Xcel didn't have to if it didn't want to. So we called Xcel to ask for it and Terry Pickens told us not to worry, it was just a little bit of radiation, and we'd have to take his word for that because Xcel was not going to provide any additional information and no Freedom of Information Act request would get it.

So while hiding beneath multiple layers of secrecy and obfuscation, Xcel says it takes protecting public health and safety and the environment seriously, and after events get reported, Xcel routinely releases a

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statement to the effect that there was never any threat to the public. This includes the January 5 event when the NRC warned that airborne contaminants from the leak *were* dangerous to life and health.

Who knows what "seriously" means to Xcel. Clearly, as far as exposure to radiation is concerned, the veracity of its often repeated claim "that there is no threat to the public" depends entirely on acquiescence to the definition of "acceptable level of risk" provided by the nuclear industry and its regulators. Their definition of what is "acceptable", unfortunately, is more a function of limitations that encumber the performance of nuclear technology than it is of biological consequences due to radiation exposure.

An uninformed society accepts the nuclear industry definition, however, and therefore dumping tritiated water that contains 15,000 pico-curies of radiation per liter is perfectly acceptable because it is below the EPA standard for Tritium in water, which is 20,000 pico-curies per liter. But if EPA standards were based on reasonable human health protection, rather than on performance levels of flawed nuclear technology, 15,000 pico-curies per liter would be an unacceptably high level of contamination. Standards based on protecting human health would force the shut down of the nuclear industry because nuclear technologies are not capable of meeting them.

Risk is real

A more reasonable definition of "acceptable level of risk" requires the inclusion of many factors, including age, sex, hazardous duty pay, and the degree to which consent to accept the risk is informed. The starting point for any reasonable definition, however, must be the fact that every single exposure to ionizing radiation, no matter how small, increases the risk of cancers, mutations, and other adverse health effects. This fact as been conclusively determined by the National Academies of Science and published in its 2005 BEIR (Biological Effects of Ionizing Radiation VII Report. Every dose increases risk, and there is no dose level at which risk is not increased.

The half life of Tritium is about 12 years, so after 12 years, about half of the original radioactive energy will have dissipated. About 1/4 of the original energy will remain after 24 years. A general rule of thumb is

that radioactive materials must undergo about 10 half-lives before they are relatively benign in terms of affecting biological activity.

The spilled tritiated water either evaporated or was collected and incorporated into the stream of waste tritiated water that Xcel routinely pumps through a pipe for disposal in the Mississippi River. Either way, it is dispersing radiation into the environment. Just because nobody monitors to define dispersion patterns in the air as well as the river does not mean that either the volume of the waste or the radioactivity it contains have disappeared.

Rather, that radioactivity will continue circulating through the biosphere, affecting living organisms for the next 120 years. Some of it will almost certainly cycle through humans, and some of it could do so repeatedly over that course of time. Every time even a minute amount of that tritiated water does enter a human body, it will undergo a residence-time in that body of 7 to 14 days. Throughout that residence-time, it will be emitting its standard dose of ionizing radiation, inside the body right next to exposed tissue.

The biological effects of radiation exposure are cumulative, and it is reasonable to postulate that a person living within dispersion patterns for radioactive releases from nuclear reactors will spend a significant portion of the time hosting elevated levels of radioactive contamination. The reported events can only add to the level of elevation.

The level of this elevated exposure, however, is totally undefined, again, because an uninformed society accepts the nuclear industry definition of "acceptable level of risk." To accurately define elevated radiation exposure levels, radiation monitoring around each nuclear facility would need to be sophisticated enough to define radiation dispersion patterns in real time.

Monitoring equipment capable of providing real-time data that defines radiation dispersion patterns is readily available. This became abundantly clear when US Environmental Protection Agency and media reports of the Fukushima radiation plume were released to the public.

Instituting such monitoring programs and providing the public with easy access to the information is the only way to satisfy basic "right to know" principles. We routinely apply "right to know" principles to food and other products, for example, and to transportation systems we all use. That's why there are road signs warning that the road will curve up ahead. It is unconscionable that "right to know" principles are not applied to radiation releases by the nuclear industry.

Instead, unfortunately, radiation monitoring around nuclear power plants only looks for radiation at plant site boundaries, and the monitoring equipment is not capable of detecting the radioactive particulate that is of concern unless a particle would actually land on a detector itself, which is about 3 inches by 3 inches, and there are maybe 100 of them around a plant. None has ever detected anything, so the industry says there is no threat to the public, even though every reactor releases hundreds of curies per year, if not more. Dispersion patterns are completely undefined.

Considering the conclusion of the BEIR VII Report, it is totally not surprising that human populations are experiencing the high and rising cancer rates that receive media attention from time to time. And it is certain that the leaks of Tritium at Prairie Island last November and on February 6, 2012, along with other routine and abnormal releases, will be primary contributing factors to the premature deaths of a number of individuals during the next 120 years. Seriously, what is it called when a person causes the premature death of another?

http://www.nrc.gov/reactors/operating/ops-experience/tritium/plant-specific-reports/prai1-2.html

http://pbadupws.nrc.gov/docs/ML1113/ML11133A357.pdf

http://www.nrc.gov/reading-rm/doc-collections/event-status/event/

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