

Behind The Secret Report Proposing Nuclear Power at Lake Diefenbaker¹

By Jim Harding, Ph.D.*

In early May 2008 a secret report entitled “*Sask Power – Preliminary Siting of a Nuclear Power Plant*” was leaked to the Saskatchewan media. The report was completed in February 2007, when the Lorne Calvert NDP government was still in power, but its fallout was left for the new Sask Party Premier Brad Wall.

A flurry of pro and anti-nuclear opinion was aired in the aftermath of the leaked report, but in the haste to make news there was little in-depth analysis of the reports premises, methods or conclusions. The 38-page report and 12 pages of appendices deserve careful scrutiny as the controversy unfolds.

Neither nuclear power nor uranium mining were debated during the October 2007 provincial election.² Nevertheless, the pro-uranium Calvert-led NDP had a policy of “no nukes”; while the Wall-led Sask Party left the impression that it was open to considering nuclear power. This leaked study suggests that ***the Calvert NDP was secretly exploring the nuclear option***, though it apparently did not want the voting public nor party membership to know.

Perhaps the most vital issue raised by the leaking of this report is the role of secrecy in attempts to expand the nuclear industry in our formalistically democratic society. It is a no-brainer that without full public disclosure and balanced reporting of public policy issues there cannot be informed consent during the electoral process. We presently seem to have neither when it comes to decision-making about the nuclear industry.

The report endorses corporate management and manipulation of public information about the nuclear controversy. Its final recommendation is that “***SaskPower should develop a pro-active communications strategy regarding this project, in the event that news is leaked to the media***” (p. 35).³ What is newsworthy, and in the public interest, is, if at all possible, to be kept from the media and public. Can we assume that the flurry of opinion and debate in the aftermath of the leaking of this report is being managed by the “communications strategy” of SaskPower’s new bosses?

1. End Use Not Explored

What isn’t addressed in this report is more vital than what is. While various environment, economic and technological issues are broached, the most fundamental question, “*Is nuclear power needed in Saskatchewan?*” is totally avoided. Not until the end of the report is this ***critical flaw*** admitted, when the authors add the qualifier that they are recommending Lake Diefenbaker as the “*preferred region*” for AECL’s Candu-6

¹ This analysis is written in honour of ***Masie Shiell (1915-2008)*** who died the day this piece was completed.

² Several of us from a cross section of environmental, ecumenical and non-nuclear organizations wrote “An Open Letter To the Leaders of the New Democratic, Liberal and Sask Party” to try to get the uranium-nuclear issue raised, but it was ignored by the political parties and the mainstream media.

³ This is not listed in the Executive Summary but only at the end of the report.

“without considering end use for the plant” (p. 34). This confession shows just how backward are attempts at nuclear expansion in the province.

The place to explore “need” is right at the start, to see whether an expensive site study is even required. But there is no such exploration. In its Introduction the report simply says “*Nuclear power is a source of energy currently being explored by SaskPower for potential future development. The potential development of a nuclear power plant within Saskatchewan is still very much at a conceptual stage.*”

Then, without any energy policy context at all, in the section on “*study requirements*”, the report says, “*Potentially, the Lake Diefenbaker region could be the site of a Candu 6 plant configured with two steam turbine generators instead of the standard 750 Megawatt single steam turbine unit. Plant output from this option would be split equally between Saskatchewan and Alberta.*” It then continues, “*The Lac La Loche region could be the site of a cogeneration plant producing electricity for Saskatchewan and steam for potential oil sands development in the region. There is currently no oil sands development in the region, and the study did not address proximity to end-point use of the steam in the Lac La Loche region or in North-East Alberta*” (p. 3).

The only place the report comes even close to considering energy policy is when it considers the implications of the distance of a plant from end uses. When the authors say “*A shorter transmission line experiences less power loss*” (p. 16) they acknowledge that energy is used more efficiently when produced as close to the end use as possible. But rather than exploring energy efficiency as a policy issue they simply consider this as a costing question. The selected Lake Diefenbaker site has the advantage of “*closer proximity to existing high voltage lines*” (p. 14), which means less capital cost.

If this matter of efficiency is seriously considered it raises fundamental questions about large, centralized energy systems like nuclear power. In addition to power losses through long transmission distances, nuclear produces large amounts of waste heat, which in turn requires large amounts of energy (and water) for cooling purposes. The decentralized production of renewable energy (e.g. solar electricity) close to end uses does not have these problems. This makes more sense from a physics and costing perspective.

A credible rationale for a nuclear plant in Saskatchewan clearly doesn’t exist, and attempts to create a rationale for nuclear power are clumsy or ill conceived. Even Bruce Johnson of the *Leader Post*, who has been a cheerleader of the uranium-nuclear industry for decades, has pointed out the absurdity of a 1500 MW Candu complex in a province with a 3,000 MW grid.⁴ That some electricity could be justified by using it in tar sands production is the same rationale used by Energy Alberta when it first proposed that AECL reactors be built near Peace River Alberta.⁵ The arguments that there will be a need for this electrical energy due to a coming shortfall in natural gas, or that steam from nuclear power is a practical or cost-effective way to remove oil from the tar sands, have both been discredited by tar sands companies.⁶

⁴ See Regina *Leader Post* column, Saturday, May 10, 2008.

⁵ Energy Alberta Corporation turned out to be a fly-by-night, trial balloon operation, something like the Western Project Development Associates (WPDA), which promoted a Candu-3 in Saskatchewan in 1989. EAC’s option was soon picked up by Bruce Power, which is owned by Trans-Canada Pipeline and Saskatoon-based Cameco and is looking to have new nuclear plants built at its Ontario reactor site. The nuclear industry is increasingly a shrinking, more monopolized club.

⁶ See my March 2008 “*Open Letter to Albertans*” for more details.

2. More Semantic Than Substantive

The terms of reference of the study were threefold: to identify three sites in two pre-selected regions,⁷ to assess these sites using “*environmental and cost factors*”, and to consider the site criteria of the AECL (p. 1). The study was undertaken for SaskPower by Stantec Consulting, which had a study team with “*experience with nuclear facilities in Ontario*” (p. 8). The report indicates that besides being directed to use AECL criteria, Stantec used the International Atomic Energy Agency (IAEA) for siting information.

As the AECL produces and sells nuclear power plants, and the IAEA is a pro-nuclear regulator we can't expect these organizations to be particularly cautious or critical or immensely objective about nuclear power. Having terms of reference that require researchers to use information from the company that produces and sells the Candu-6, the reactor the study is recommending, *smacks of collusion*. The AECL has a long track record of failed reactor designs, including the 450 MW Candu-3 flouted in Saskatchewan after 1989, and never built, and the recent cancelling of the over-cost, design flawed Maple isotope reactors at Chalk River.⁸ With such incestuousness with a corporation with such a credibility problem, it is little wonder that SaskPower wanted to keep this report secret.⁹

The methodology of the leaked report is simplistic. The report admits that all its information was “*secondary data*” (p. 24), which means that existing information, including from the AECL, was simply compiled. This is one way that bias re-circulates, and new information that poses basic questions about the efficacy and dangers of nuclear power is ignored. Nevertheless the study does have a quite comprehensive list of “*screening criteria*” related to technology, cost, environment and social impact. And to its credit, in Section 4.2, it admits that there are difficulties doing such qualitative analysis and is explicit about the nature of its many assumptions.

But there is no critical examination of the substantive science relating to its various screening criteria. Rather it uses a weighting system from highest (5) to lowest (1) importance, which it admits “*is subjective*” (p. 15). The criteria it considers of highest importance are: population proximity, seismology, aboriginal interests, radioactivity and public health – but the reason given are superficial. It claims that there are only two “*knock-out criteria*” which could stop the project: a cooling water temperature of 25.5 degrees or greater, and serious land use constraints that can't easily be accommodated. It is noteworthy that ***neither a lack of need for nuclear power, nor the lack of a solution to the nuclear waste (spent fuel) problem, is considered as “knock-out” criteria***. Below I will show that a serious investigation of the matter of water for cooling the reactor would likely “knock out” the project.

The definitions used in the screening process are circular and sometimes banal. For example, the assumption made about evaluating radioactivity is that “*Emissions from a Nuclear Power Plant are independent of the site but depend on design and operation. Radioactivity will therefore be equally scored in the Evaluative Matrix*” (p. 18). This is

⁷ It would be good to know why SaskPower selected the regions of Lac La Loche and Lake Diefenbaker. I suspect that they were already thinking, though not very clearly, of economic development projects in both cases.

⁸ Shawn McCarthy, “AECL pulls plug on reactors after millions spent”, *The Globe and Mail*, May 17, 2008, p. A6.

⁹ Let us not forget that the Devine Tory government in the 1980s signed several secret MOU with the AECL. See for example, *Canada's Deadly Secret*, p. 168-71.

treated as the end-point of discussion, whereas it is only the beginning. For example, nowhere in the report is the fact addressed that due to its use of heavy water in its design, ***AECL's Candu has the largest releases of radioactive hydrogen, the carcinogen tritium, of any reactor anywhere.*** Furthermore, this *empty analysis* rules out serious consideration of public health hazards from radioactive emissions from nuclear power plants. The authors seem completely unaware of the rash of European studies linking childhood leukemia to proximity to nuclear facilities.¹⁰

When evaluation criteria are applied to the sites being considered, the definitions remain vague, even meaningless. The general question, “will the nuclear plant have ‘*minimal impact*’?” is repeated over and over regarding population density, terrestrial and aquatic impacts without ever saying what “*minimal*” would actually mean. The vital discussion of probable, concrete impacts and consequences is never entertained. The report remains more semantic than substantive.

3. Environmental Health Risks

3.1 Risks from Nuclear Accidents Admitted

It's vital to explore the substantive environmental health issues that are obscured or buried by the report's superficial semantic approach.

Perhaps because this study was meant to remain out of the realm of public scrutiny, ***the authors are strikingly candid about the risks that nuclear power plants pose to the people living in the region.*** In one place the report says “*Plant operations are assumed to have negative impact on the surrounding population*” (p. 17). In another, the authors say that proximity to recreational areas, including campsites, could create constraints to building a nuclear plant because “*...the locations could be difficult to evacuate should that be required during an emergency event*” (p. 11). In introducing why “*population proximity*” is a vital “*evaluation topic*” the report gets more direct, saying, “*Population density near the power plant is important, particularly in the event of a severe accident. The general principle is to site the facility in a sparsely populated area that is far from large population centres (my emphasis)*” (p. 8).

Such an admission in a leaked report drawing on AECL's own siting information will not be reassuring news to people in the Toronto area, with the Pickering nuclear reactor complex nearby; or to those living in Oshawa, near the huge Darlington nuclear reactor complex. Nor should it be reassuring to people living in small town Saskatchewan or Alberta that are being targeted for reactors due to their lower density, and, the real bottom line, the availability of coolant water.

The report places the risk of nuclear accidents primarily in the context of seismology, with the authors commenting that, “*Saskatchewan lies in the lowest earthquake risk category*” (p. 10).¹¹ While this matters, it is the nature of the technology itself, primarily the risk of a melt down from a loss of coolant accident (LOCA), that is the major factor to consider. Nuclear proponents manipulated past projections of the probability of a major accident being only 1 in 100,000-reactor years.¹² A more realistic estimate, born

¹⁰ I discuss both these matters in “*Why Nuclear Is Not Healthy for Human or Other Life*”, presented to the Physicians for Global Survival, Couchiching, Ontario, March 28, 2008.

¹¹ The fact that the Peace River site is on a fault line which could be activated by industrial activity in the gas fields and tar sands could be used as a reason to target Saskatchewan for a nuclear power plant.

¹² See Canada's Deadly Secret, p. 47.

out by the actual occurrence of accidents at Windscale (1957), Three Mile Island (1979) and Chernobyl (1986), is *1 in 10,000 reactor years*. This means that if there are 500 nuclear reactors worldwide we can expect a major accident every 20 years. If the number of reactors gets doubled to 1,000 nuclear plants then we can expect a major reactor accident every decade. Considering that many nuclear plants were built in densely populated areas, this magnitude of probability carries serious risks for millions of people in Ontario, the U.S., France, Japan and elsewhere.

When the two regions for siting a nuclear plant in Saskatchewan were compared, the authors conclude that the Lac La Loche area “*has an extremely low population density*” (p. 10), whereas Lake Diefenbaker “*has many communities with small populations*”. But it qualifies the statement about the Lake Diefenbaker area by reassuringly saying there are “*no major urban centres are nearby*” (p. 11). The trade-offs are becoming clearer. While Lac La Loche would be a better place to have a nuclear power plant in terms of the number of people put at risk, other criteria (e.g. water, cost and amenities) make Lake Diefenbaker the preferred site. But the population is still defined as “*low*” and, since there are “*no major urban centres*” nearby, the authors decide it is justifiable to put these larger number of people in the Lake Diefenbaker region at added risk.

Low density in the siting of nuclear power plants is becoming more of a concern to the nuclear industry. One reason for a previous proposal of Cree Lake, Saskatchewan as a site for a huge nuclear reactor complex was the low density of the Indigenous people.¹³ We see a similar trade-off, which some would argue remains colonial and even racist, when it comes to siting uranium mines with their carcinogenic tailings near Indigenous communities. It is noteworthy, in this regard, that over recent months the City of Ottawa and Kingston and 17 other Ontario municipalities have voted for a moratorium on all uranium mining in the region, because of concerns that the radon gas and other carcinogens in the tailings will contaminate the huge Mississippi Watershed. Also the Grand Canyon authority is presently preparing legislation that would ban uranium mining within the Grand Canyon Watershed.¹⁴ But not a peep from the city of Saskatoon, where the good corporate citizen, uranium giant Cameco is headquartered, or from Regina, the seat of Saskatchewan’s government, about the implications of uranium mining for long-term water quality in our North.¹⁵

Peace River, a “small community” of 6,500 people, is the site proposed for AECL reactors in Alberta. The planned expansion of nuclear power in Ontario is at the Bruce Power plant on Lake Huron, near the “small communities” of Kincardine and Port Elgin, farther away from Toronto and other major cities than the Pickering or Darlington plants. (All these sites, of course, must have a major source of water – e.g. the Peace River, Lake Huron, Lake Diefenbaker, etc.). So, while in its public relations the nuclear industry and its consultants downplay the risks of nuclear accidents, in its more secretive siting documents, such as this leaked SaskPower report, they take the number of people who are being placed at risk into consideration.

¹³ See *Canada’s Deadly Secret*, p. 232-33.

¹⁴ Some aquifers from uranium mines in Colorado are already contaminated with radioactive plumes. A radioactive plume from uranium contamination from Cameco’s uranium conversion plant also is moving in the aquifer under the town of Port Hope.

¹⁵ See my short listing of “Major Environmental Events: spills, floods and review failings at Saskatchewan uranium mines – 1979-2006”, or see my *Canada’s Deadly Secret*, pages 66, 124, 63-66, 85-90, 186-90, 239, 236, 235-36, for more details on most of these events.

The leaked Stantec report even raises the matter of a “*protective zone*” and an “*emergency planning zone*” around any nuclear power plant considered for Saskatchewan. But the authors don’t explore this in any depth. Years ago one of the industry’s biggest advocates was quite candid about the risks of nuclear accidents. Speaking to the 1977 IAEA conference on the Nuclear Fuel Cycle, U.S. nuclear scientist Alvin Weinberg said “...we nuclear scientist have not faced up to the full consequences of complete success. If we succeed in building tens of thousands of nuclear reactors... which we must do to make any noticeable dent in the world’s use of petroleum, we can expect to have a core meltdown approximately every four years. The lesson is clear. We must stop building these reactors near large cities.”¹⁶ Nuclear power plants continued to be built in or around large cities in spite of this provocative warning.

The several thousand residents living in such municipalities as Loreburn, Lucky Lake, Elbow, Maple Bush and Riverhurst in the Lake Diefenbaker area will not be reassured because they live in a less dense area. That nuclear power plants are now being targeted for such low density areas is actually a clear message that the local people are intentionally being put at greater risk. Thankfully we don’t need to go the nuclear route envisaged by Weinberg, as demand side management (DSM) and renewable energy sources are more effective means for producing electricity and reducing greenhouse gases while not threatening vulnerable watersheds.

3.2 But Nuclear Waste, Food Safety and Public Health Ignored

The leaked report also mentions spent fuel (nuclear wastes) as an evaluation topic. However, this is not raised as a serious problem in itself, which it is,¹⁷ but is placed in the context of transportation infrastructure. It says, “...waste materials (spent fuel) will need to be transported off-site once operations begins...and a high quality of transportation infrastructure is required” (p. 9). The statement “once operations begin” could be a misunderstanding, or it could be a slip. The industry-based Nuclear Waste Management Organization (NWMO) publicly says that spent fuel will remain at reactor sites for 30 years, until (if) a long-term nuclear waste management plan is devised for the 1,000,000 years required.¹⁸ (Nuclear officials have been promoting such a leap of faith that there will be such a “solution” since the industry began over a half century ago.) Since the AECL and Cameco have both advocated that nuclear wastes be taken back to Saskatchewan’s north, this phrase about transporting spent fuel off-site could be a warning that ***building a nuclear reactor here is part of a strategy to legitimize a nuclear waste dump in the North.***

The report also notes that, “*Lake Diefenbaker is surrounded by agricultural lands*”, but then quickly concludes that “*The agricultural land use will likely have no influence on the potential plant development and operation*” (p. 11). This is ass-backward, as it ***ignores the impact of the nuclear plant on the land*** – e.g. that ongoing emissions from a nuclear reactor build up regional levels of some radioactive isotopes in the food chain. It also ignores what nuclear accidents have already done to the land – e.g. the Chernobyl accident in the Ukraine leave some contaminated areas of Europe unable to produce food

¹⁶ Quoted in Gordon Edwards, Comments on Bill C-5, before Standing Committee on Natural Resources, Ottawa, Nov. 29, 2007.

¹⁷ See paper presented to Physicians for Global Survival.

¹⁸ The US Supreme Court just ruled that the Department of Energy must provide reassurances for this kind of time span at the proposed Yucca Mountain nuclear waste dump.

for as long as 600 years.¹⁹ Our society is being challenged to become more sustainable, and hopefully to take a more preventative approach to address the cancer epidemic. With moves towards more organic food supplies, ***the last thing Saskatchewan farmers need is the risks or the stigma from a nuclear power plant in food growing areas.***

The study is no more thorough when it discusses public health. The report says, “*Emissions from a Nuclear Power Plant are independent of the site but depend on design and operation. Public Health will therefore be equally scored in the Evaluative Matrix*” (p.) This begs all the important questions about the actual impacts on public health – e.g. it ignores the growing evidence that the ubiquitous air-borne radiation from nuclear plants increases cancer levels, and the dangers to the drinking water from the carcinogen tritium.

It is noteworthy that the report also highlights “*Aboriginal interests*” as an important “*social criteria*”. And it states as one of its assumptions that, “*Plant locations should have minimal impact on aboriginal land entitlements and traditional land uses*” (p. 18). When it evaluates the Lac La Loche site it even concludes that, “*There may be some aesthetic incompatibility with the presence of a nuclear facility within visual proximity to the historic canoe route*” (p. 12). The apparent sensitivity is encouraging. How is it that these kinds of concerns were so totally ignored regarding the expansion of the uranium mines throughout northern Saskatchewan that provide the fuel for nuclear plants?

4. Climate Change and Water Security at Lake Diefenbaker

The preferred site for a Candu-6 is said to be midway between Gardiner Dam and the town of Elbow. This site was primarily selected because Lake Diefenbaker is deepest on the east side, and this area provides the most secure supply for the millions of gallons of water required daily to cool a nuclear plant. It is interesting that the nuclear industry promotes its radioactive hardware because a nuclear plant doesn’t produce the carbon that comes from a coal-fired plant. (A full energy cycle carbon analysis – from mining, through refining, enriching to plant construction and decommissioning, however, reveals a lot of carbon emissions; far more than renewables and, with lower grade uranium ore, levels approaching that of coal.) However, the nuclear industry doesn’t mention that the extremely hot nuclear fission process, used to produce steam for generating electricity, uses much more water than does the cooling of an equivalent MW coal-fired plant.

The coming water crisis created by climate change must become our uppermost concern, because in the near future it will be water that is the bottom line. But the leaked report’s consideration of water is superficial. Based on its secondary sources the report says that Lake Diefenbaker is 58 meters deep at full supply at the preferred site. Yet later it admits that, “*only maximum depth data was available for Lake Diefenbaker*” (p. 34). This is a bit like counting only your winnings while denying your losses from playing a VLT.

The report admits that Lake Diefenbaker is a human-made reservoir that “*...depends upon spring runoff from the mountains.*” It continues, “*Should that decrease in the future, the lake may have difficulty reaching full supply level*” (p. 11). It would be more accurate to say “will” rather than “may.” We have already seen a huge decrease in the size of glaciers in the Rocky Mountains and these (along with Arctic icebergs) are all

¹⁹ Helen Caldicott, *Nuclear Power Is Not The Answer*, New York: the New Press, 2007, pp. 62, 76.

predicted to melt more quickly with climate change. This loss of recharge capacity at the glacial source of the Saskatchewan River system will have implications all along the watershed, including right outside our door where we live off Echo Lake in Fort San in south east Saskatchewan.

The authors acknowledge that even *without* global warming there could be deleterious aquatic impacts and serious water scarcity from a nuclear plant. The report admits that, “*Recycling water back into the lake has the potential to alter the aquatic habitat and water distributions within the lake*”.²⁰ It also admits that, “*Cooling towers, for example, could deplete the lake of water*”. However, instead of raising the fundamental question of water quality and security, it links this to “*excessive ice fog during winter months, which could then produce safety hazards on nearby transportation routes*”(p. 9).

Climate change scenarios predict greater threats to water security, and the indicators are already with us. During recent killer heat waves in Europe, nuclear plants in France and elsewhere had to be shut down or to greatly reduce their output due to rising water temperature and reduced water supply for cooling. Twenty-four of the 104 reactors in the U.S. are in drought-prone areas, and ***droughts in the mid-west have already lowered water levels used for cooling nuclear plants to emergency levels.***²¹

It is time we learned to make decisions based on experience rather than letting ideology blind us from the lessons of experience. The leaked SaskPower report admits that the mixed grasslands to the west of Lake Diefenbaker are already “*the driest area of the province*” (p. 8). So how can the authors so quickly rule out conflict between the use of the lake for the huge amounts of water required for cooling a nuclear reactor and the agricultural uses of the reservoir?

At best, there is a mixed message about water in the leaked report. While it chooses Lake Diefenbaker as the preferred site for a nuclear plant, and tries to create a justification that there is sufficient water, its first recommendation is “*...to assess the security of water supply due to competing uses upsteam and potential climate change, and the competing demands for water downstream*” (p. 2). (At the end of the report it states this much differently, saying “*...future studies should be undertaken to confirm the suitability of Lake Diefenbaker and Lac La Loche for providing condenser cooling water, while still meeting other local needs and/or regulatory requirements*” (p. 34).)

What stopped the authors from looking directly at the implications of research on the impact of climate change on the prairies for the security of water supply in the Lake Diefenbaker region?²² Though it recommends this be done, when the report itself looks at “*climate and meteorological events*” as an evaluation topic, it only mentions “*...extreme events such as tornadoes, fog, blowing snow, thunderstorms, etc ... (and it emphasizes)... potential to affect plant operations...and traffic to and from the site*” (p. 8). This narrow, industry-based viewpoint shows how prejudging that a nuclear power plant is a good thing, without even having a rationale for end use, can distort the handling of fundamental issues like water.

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²¹ See Julio Godoy, “European Heat Waves Shows Limits of Nuclear Energy”, *Oneworld.net*, July 28, 2006; and “US drought could dry up coolant water and force nuclear plants to shut down”, *Canadian Press Newswire*, January 23, 2008.

²² Researchers at Canadian Plains at the University of Regina have already released some preliminary studies on this.

Though the authors don't directly look at the implications of climate change for water security at Lake Diefenbaker, they do recognize potential conflict between water for nuclear power plant cooling and domestic water uses for the hundreds of thousands of Saskatchewan citizens who depend upon this fragile watershed. The report notes that Lake Diefenbaker "...supplies about 40% of Saskatchewan's domestic water drawn from the South Saskatchewan River downstream" (p. 34). Not only does this river system go right through Saskatoon, but also it diverts through Buffalo Pound, from which Regina gets its water, and continues into the Qu'Appelle lake system.

The Qu'Appelle system continues into the Assiniboine and Red rivers in Manitoba, and then north into Lake Winnipeg and Hudson Bay. The South Saskatchewan River hooks up with the North Saskatchewan River past Prince Albert and also goes into Lake Winnipeg and Hudson Bay. It is one interconnected watershed that we must protect for future generations as our contribution to sustainability.²³

When the report makes recommendations about drinking water all it says is that there should be "*sufficient distance between cooling water discharge and water extraction for drinking purposes*" (p. 34). The authors seem indifferent to the fact that the extraction of large volumes of water for nuclear plant cooling would greatly reduce or deplete downstream drinking water quality and supplies. And they remain unaware that the Candu technology releases large amounts of radioactive hydrogen (tritium) that would have major implications for drinking water safety downstream.²⁴

The leaked report argues there are only two "*knockout criteria*" – water temperature and incompatible land use – that could stop the nuclear project. If the authors had done an in-depth analysis of the implications of climate change for water security, and addressed the high probability of growing conflict between agricultural and domestic water uses on the one hand, and the use of Lake Diefenbaker for cooling a nuclear power plant on the other, both these knock-out criteria would come into play. If they had looked at the drinking water issue in any depth, including the inevitable downstream water degradation and contamination from tritium, this would have been the final knock-out of the project.

Doing only a superficial analysis based on secondary sources they chose to displace the most vital evaluative issue, water, to "*further study*." It would be interesting to know what the taxpayer paid to get a study that displaced the most critical issue to "*further research*".

5. Moving On From The Nuclear Economic Boom Mentality

The Saskatchewan public would be outraged if it knew the extent of secretive planning and behind-the-scene "public acceptance" promotions being undertaken by the nuclear industry.²⁵ It would be doubly outraged if it realized that this industry, which can't survive without massive subsidies, was propagandizing us with our own money.

If this particular report hadn't been leaked the Saskatchewan public and media would have remained unaware that the previous Calvert NDP government was quite far along in

²³ Remember that "sustainable development" means meeting our needs in a way that doesn't compromise the ability of future generations to meet theirs.

²⁴ The International Joint Commission (IJC) that oversees the health of the Great Lakes considers tritium a "candidate for zero emission" because it is a persistent carcinogen.

²⁵ Much of the previously unknown information in my book *Canada's Deadly Secret* came from leaked reports.

considering nuclear power by researching preferred siting. The irony is that it will be the new, Wall-led Sask Party that will be the public advocate for the nuclear industry in the province, and the NDP could even get re-elected in part by publicly opposing this. This is similar to what happened when the Romanow NDP defeated the Devine Conservative government in 1991.²⁶

Even with this report available, how unaware do we remain about other secretive nuclear expansion planning? Until I did the research for my book on the uranium-nuclear controversy I was mostly unaware of the history of past Saskatchewan government's attempts to develop the nuclear industry in our province. Had they gotten their way we would be more like Ontario, with its huge dependency on risky, costly and debt-ridden nuclear-generated electricity, with accumulating spent fuel that no one really knows what to do with. And our economy would be even more dependent on non-renewable resources, with all the greed-based resistance this creates to a sustainable society.

In 1971 the provincial government secretly negotiated with the federal government to try to get a uranium enrichment plant in the Estevan area. Such an energy-intensive plant would not only have required its own large coal-fired plant, but would have required a massive volume of water diverted from Lake Diefenbaker. In 1973 the provincial government tried to get a heavy water plant in Saskatchewan, which would have also required the diversion of water from Lake Diefenbaker.²⁷ It took leaks in 1979 about land purchasing near Warman outside Saskatoon to find out that the Blakeney NDP government was promoting a uranium refinery in the province. Public opposition helped stop this going ahead.

This push to expand nuclear power continues. The previous NDP government under Calvert's leadership was again trying to get a uranium refinery built and engaging in secretive explorations of nuclear power, and the present Wall-led Sask Party government talks favourable of both.

Why, in the face of all the solid evidence in support of alternative non-nuclear energy, do these mainstream political parties and the Saskatchewan business elite and corporate media remain so reflexively adamant about nuclear power? The case for nuclear energy as a fix for climate change is a fraud.²⁸ Furthermore, with its dependency on massive amounts of coolant water and very real risks of further major accidents, the nuclear industry will never be able to provide fundamental energy security. Furthermore, there is growing research showing the serious environmental health hazards of the whole nuclear fuel system, from uranium mining²⁹ to nuclear power to spent fuel, and there remains strong reasons to believe that uranium continues to get into the nuclear and uranium weapons stream. If all this isn't enough to sway the pro-nukes, ***you'd think the clincher for business-minded people and governments would be the economic bottom-line*** – e.g. the fact that the federal government continues to bailout the nuclear industry with massive subsidies, and that real costing of nuclear shows it to be much more expensive than the alternatives.

²⁶ I discuss this in chapter 13 in *Canada's Deadly Secret*.

²⁷ See *Canada's Deadly Secret*, pp. 246-47.

²⁸ There are many parallels between the rush to bio-fuels and nuclear and the political economic reasons for this.

²⁹ A recent study of villagers living near uranium mines in India confirms the public health hazards. Go to Canadian Physicians for Global Survival website for more information.

But, no, *there is apparently no critical reasoning among those who flaunt the nuclear industry in Saskatchewan*. Perhaps the reason why the nuclear proponents in Saskatchewan sometimes label the anti-nukes as “emotional zealots” is projection; because, deep down, the proponents are extremely emotional about the issue. They are even angry that the prospects, of what they have been led to believe will be a huge and profitable value-added economic boom from nuclear expansion, may go elsewhere.³⁰

If reasoning about practical and effective strategies for addressing climate change won't convince them otherwise; if concerns about environmental and public health won't convince them otherwise; and if they prefer to treat the serious threat of nuclear proliferation as “out of site, out of mind”, why won't the devastating economic critique of the nuclear industry convince them to let go of the nuclear dream which has become a nightmare? I can only conclude that as long as there are short-term private benefits and prospects of more lucrative economic activity from construction, infrastructure, labour, consulting, whatever, that the proponents will continue to support nuclear power, regardless of real costs to us and future generations. Until the money tree provided by direct and hidden subsidies dries up there will be those with links to state power who will keep picking from it.

5.1 Tearing Down The Uranium Curtain

Saskatchewan is in deep trouble if short-term greed and self-interest trumps all these vital questions about sustainability and morality. Perhaps we need to now name the curtain of disinformation and denial and self-interest the “*Uranium Curtain*”, along the lines of another “wall of silence” named after another mineral element, the “*Iron Curtain*”. We'll have to continue with education and activism that turns the meaning of “value-added” right-side up, to mean adding human and ecological values back into the discourse. And by the bottom line we must come to mean the protection of watersheds.

Ongoing polling of public opinion about nuclear power provides some basis for “hope”. It is clear from recent results that all the high-powered nuclear propaganda since the 1980s, claiming that uranium-nuclear is a value-free industry that can bring economic development opportunities to the Saskatchewan economy, has had some influence. The latest poll, done by Sigma for the *Leader Post*, found that 59% of those polled supported, whereas only 19% opposed, a uranium refinery.³¹ A fairly large undecided (22%) remains. The *Uranium Curtain* appears to be working as we can be fairly sure those supporting a uranium refinery here have no direct knowledge of the uranium contamination of people in the town of Port Hope, Ontario where Cameco presently operates a uranium conversion plant.³²

However, as I argued in an earlier piece printed in *The Prairie Messenger*,³³ general support for nuclear expansion declines when the question turns to nuclear power. Now

³⁰ Saskatchewan's business elite is clearly trying to get Bruce Power to abandon the Peace River nuclear project in favour of one that expands (industrializes) the nuclear fuel system in Saskatchewan beyond uranium mining. Trans-Canada Pipeline, a part owner of Bruce Power, is already on record that this should be considered.

³¹ “Saskatchewan Residents Favour Nuclear Options”, *Regina Leader Post*, Wednesday, May 14, 2008, p. A1-2.

³² See Kate Harries, “Nuclear Reaction: Cancer Ravages Canada's atomic town”, *The Walrus*, March 2008, pp. 37-45.

³³ “Beneath Saskatchewan's Nuclear Poll”, *Prairie Messenger*, March 5, 2008.

support falls below 50% (49%), and opposition rises to 29%. In other words there is a 10% shift from pro to anti-nuclear public opinion, with 22% remaining undecided. Most noteworthy, when the question about nuclear power gets specific, asking about support for the Lake Diefenbaker proposal revealed in the leaked report, it declines even further, another 10% drop to 38.1 %. And opposition to nuclear power rises more than 10%, to 40.5 %, which is more than those who favour it. The undecided stays near 22 %.

The front-page *Leader Post* banner headline to the story of this poll says, “*Saskatchewan Residents Favour Nuclear Options*”. While this is not an outright distortion, it is clearly not contextualized the way ethical and professional journalism requires. A more responsible and accurate headline, or at least sub-head, would read, “***More Oppose Than Support Nuclear Power at Lake Diefenbaker***”. But this *story within the story* is obscured by the phrase on page 2 of the coverage that there is “*modest opposition overall*” to the Lake Diefenbaker nuclear power proposal. Presumably the *Leader Post* did this poll because of the leaked report recommending Lake Diefenbaker as the preferred site for a nuclear plant. Therefore it would seem worth highlighting the finding that slightly more oppose than support such an idea. But, as a prominent member of the Saskatchewan nuclear cheerleaders, the *Leader Post* Editorial Board likely had other motives, such as to fuel the nuclear bandwagon, in covering this story the way it did.

It is clear that the more specific and the closer to being sited a nuclear power proposal becomes, the more the opposition in Saskatchewan grows. It is one thing to support nuclear power in general, especially when you are inundated with the industry’s fallacious promotions, and alternative information remains largely marginalized. It is quite another thing to seriously think of ***the implications of a nuclear power plant for the bioregion where you live, breath, eat, drink, raise your family and live out your life.*** Some deeply seated common sense about water security among the Saskatchewan population is likely at the root of the opposition to the Lake Diefenbaker proposal. It is around this common sense and the continuing battle to create space for balanced public discussion on energy alternatives that a new politics of sustainability will have to be built in Saskatchewan.

May 21, 2008

- *Jim Harding recently returned from speaking on his new book **Canada’s Deadly Secret: Saskatchewan Uranium Mining and the Global Nuclear System** (Fernwood, 2007) at 30 events from Vancouver Island to West Quebec. He spoke in Peace River Alberta, near where the proposed AECL ARC-1000 would be located; at Whitecourt, Alberta, where France’s Areva Corporation has proposed a nuclear plant; at several locations in the Ottawa Valley where support for a moratorium on uranium mining is quickly growing; in Port Hope, Ontario, where uranium refining or conversion has been occurring since the start of the arms race, and many other places. He spoke to peace, environmental, church, health, physician and other groups and was sponsored by such organizations as the United Nations Association, Nuclear Free Alberta, Physicians for Global Survival, Sierra Canada, Council of Canadians, KAIROS, various university Public Interest Research Groups and community coalitions working for a non-nuclear society.*
- *This piece will form a section of an upcoming publication, “**Travelling Through Canada’s Nuclear Fuel System**”, which chronicles the struggles for a non-nuclear future in Northern Alberta, the Ottawa Valley, the Great Lakes region, within Saskatchewan and the Atlantic Provinces. A trip is being planned to Nova Scotia in the fall.*