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Oral intervention from

Edward Burt

In the Matter of

Ontario Power Generation Inc.

Proposed Environmental Impact Statement for OPG's Deep Geological Repository (DGR) Project for Low and Intermediate Level Waste

Joint Review Panel

September 16 to October 12, 2013

Intervention orale par

Edward Burt

À l'égard de

Ontario Power Generation Inc.

Étude proposée pour l'énoncé des incidences environnementales pour l'Installation de stockage de déchets radioactifs à faible et moyenne activité dans des couches géologiques profondes

Commission d'examen conjoint

16 septembre au 12 octobre 2013

Canada

Miners look for ways to stop cancer deaths

TORONTO (CP) — A group of miners from Northern Ontario and officials of their union met with Ontario Labor Minister Bill Wrye on Wednesday to seek his help in trying to halt cancer deaths among gold and uranium miners.

Citing a recent study that showed a high percentage of miners have died of cancer, the United Steel Workers Union asked Wrye to support a 13-step progam of action that includes a cleanup of the workplace, more humane workers' compensation rules, establishing occupational health clinics in each mining community and improved cancer treatment centres in the North.

The report indicated miners suffered a high rate of trachea, bronchus and lung cancers as well as diseases related to silica dust.

DISTRICT

Editor: Ed Piwowarczyk
Day - 759-3030
Night - 759-3037

Uranium levels high within metres of plant

BY ANNE ASTLES
Special to the Star

BLIND RIVER - A report of soil and vegetation sampling around the Cameco uranium refinery over a six-year period shows an accumulation of uranium since the plant went into operation in 1983.

The report documents testing from 1981 through 1987 and shows an inrease in uranium concentrations in vegetation at five out of the six test locations. The greatest increases occurred at three sites within 300 metres of the refinery.

Cameco environmental and radiation superintendent Jim Sandles said these sites are within the buffer zone of the refinery. The company carries out similar testing with the Environment Ministry.

Mr. Sandles said the increase in accumulated uranium was predicted in studies carried out prior to start-up of the refinery.

"We knew there would be some build-up from emissions once operation began," Mr. Sandles said "but the build up is about one-third of the predictions."

The MOE report shows increased uranium levels were noted at all four test locations on company property and one of two off-property test locatons.

Increased uranium levels were measured at all test locations within 1,200 metres of the plant. There was no discernible level at a site 2,400 metres away.

At one site 300 metres south of the refinery, uranium concentrations in trembling aspen foilage rose from 0.02 parts per million (ppm) in 1982 to 2.73 ppm in 1987. Natural background concentrations for vegetation are in the range of 0.005-0.08 ppm uranium, the report states.

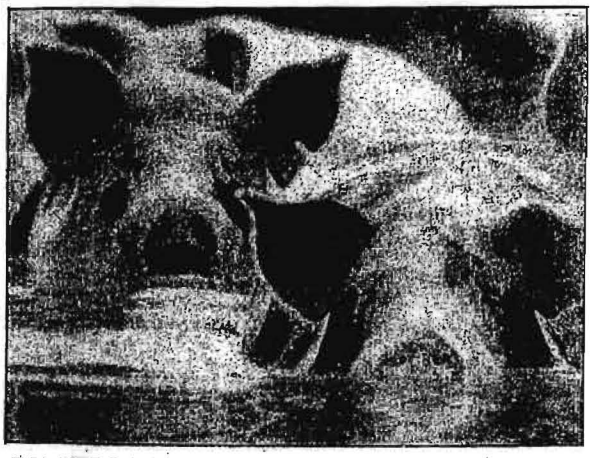
Low levels of uranium were detected in all wild edible plants sampled around the refinery, the MOE report shows, with the highest concentration of 0.67 ppm found in bunchberries.

Ministry of Labor authorities advise that the levels present no undue hazard for occasional consumption.

The Ministry of the Environment began sampling air at St. Joseph's hospital in Blind River in 1982 to document any effects of the refinery on air quality in the community.

Uranium levels in suspended particulates were consistently at or near detection limits in tests at the hospital, indicating no change from 1982 to 1987. Thorium 228 was not detected in any samples during this period. Low levels of radium 226, gross alpha and gross beta were detected.

Monitoring of the area surounding the refinery by the company and the ministry will continue.



PORKERS IN PARADISE — Warm temperatures and high humidity drives a group of pigs to cool off in a pond in Shepardsville, Ky. Sault Ste. Marie livestock haven't been faced with the same sort of conditions lately, but the weatherman does say temperatures will be milder than last week.

Liquor is talk of town

By EDITH CAMERON
Special To the Star

IRON BRIDGE — Following discussion on the "targeting" of liquor store closures in small towns, the village council has passed a resolution strongly encouraging the Liquor Control Board of Ontario and the Ministry of Consumer and Commercial Relations to continue the operation of the retail outlet here.

Charles Moore, a board employee and director of the union, gave a presentation on how things stand today regarding closures of outlets signified as 'D' stores — the category of the Iron Bridge store.

"Certainly these outlets, if has been suggested by LCBO, should be replaced by an agency store that is grocery store, gas station, etc. We feel that this is a step towards privatization and spells a definite loss of service to the community.

Mayor confident about Eldorado commitment

BY ANNE ASTLES
Special to the Star

BLIND RIVER — Mayor Bob Gallagher is confident the new company formed by the merger of Eldorado Nuclear and Saskatchewan Mining Development Corp. will not affect the Crown corporation's commitment to the Town of Blind River.

Meanwhile, Algoma MP Maurice Foster says the Liberal caucus will not see Bill C121 pass until there is a written commitment to the town of Blind River.

Gallagher

Hearings are under way in Ottawa regarding the privatization of Eldorado Nuclear Ltd.

Prior to the hearings, Dr. Foster had said the agreement between Eldorado and Blind River established that the new company will be responsible for maintaining the grant for recreation.

However, Eldorado chief executive officer George Currie, following the first day of hearings, was unable to give Dr. Foster a firm commitment on the future of the grant. "He advised me they would be willing to review the agreement, but there was no firm commitment."

Foster

The agreement calls for Eldorado to pay the Town of Blind River a grant of 60 per cent of the amount paid by the Crown corporation in lieu of taxes each year. The company will pay approximately $85,000 this year and it increases according to tax increses yearly. The agreement was drawn up prior to construction of the new Community Centre.

McKeough

Revenue from the agreement helps the municipality towards the interest on debentures issued for constrcution of the centre.

Mayor Bob Gallagher travelled to Ottawa to state the town's case at the hearings. He said, "The committee was very supportive. They see the need for an agreement with the new company."

The mayor has received a commitment for payment of the grant for 1988 and 1989 and is confident it will continue.

"We signed in good faith and the debentures are for 20 years," he said. "They have a moral obligation to continue the agreement. We would never have made the commitment if we thought they would not honor the agreement."

Dr. Foster said in a telephone interview from Ottawa that his concern is that once the private corporation takes over, the Saskatchewan government will have the "upper hand."

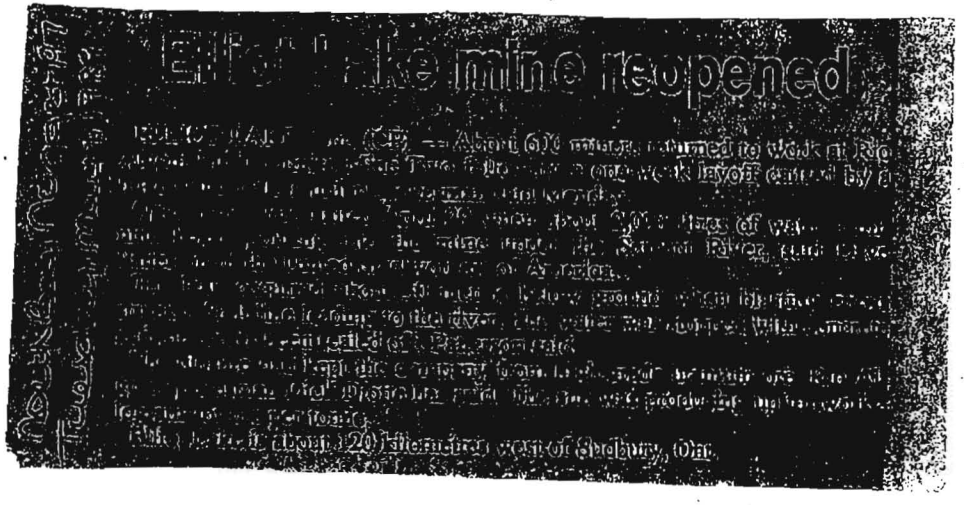
He said, "I am concerned Blind River will become lost in the process and I want a written commitment to the municipality."

He added Darcy McKeough, the chief executive officer of the Canadian Development Investment Corp., is very supportive of Blind River's position. "He overturned everything Mr. Currie said."

Once the company is privatized, they will be required to pay school taxes and Mr. Currie belives this entitles the company to end the special grant agreement with Blind River.

"They believe there is some room for negotiations between the province of Ontario and Blind River," Dr. Foster said.

Whatever the negotiations and regardless of with whom, Dr. Foster said the Liberal caucus will not see the bill passed until there is a written commitment satisfactory to the town of Blind River. "We will do everything possible to ensure this agreement continues."



Editor: Ed Piwowarczyk
Day - 759-3030
Night - 759-3037

New uranium company formed by merger to be called Cameco

BY ANNE ASTLES
Special to the Star

BLIND RIVER — A new company being formed by the merger of Eldorado Nuclear Ltd. and Saskatchewan Mining Development Corp. will be called Cameco.

William A. Gatenby, chairman, president and chief executive Officer of the new corporation to be formed by the merger, announced in a press release Thursday that the board of directors of the new corporation has accepted his recommendation that the merged company be called Cameco—A Canadian Mining and Energy Corporation.

Mr. Gatenby said, "I like the name because it is a straightforward description of what the company does at the present time and yet it can encompass the diversification that we are looking forward to in the future.

"We think our present shareholders, our future investors and our employees in both Ontario and Saskatchewan will agree that Cameco provides the company with the right kind of national and international image that it deserves."

Mr. Gatenby added the name selection process had been directed by an internal task force made up of members of both companies who worked with a professional consultant. As well, suggestions were solicited from employees and from customers (electrical utilities around the world). "In fact, it was one of our customers who proposed Cameco—A Canadian Mining and Energy Corportion."

Mr. Gatenby also announced initial appointments to the board of directors for Cameco. He has been elected chairman of the board, while the directors include Senator E. W. Barootes, Marel Belanger, Mary-Jean Mitchell Green, W. Darcy McKeough, Wolfgang Wolff, and F. William Woodward.

Cameco's chairman added he's extremely pleased with the board appointments and believes these individuals will bring invaluable business experience to the new company. "Their advice and guidance will be a real asset to our new management team as we make decisions that affect the future direction of Cameco. In particular, of course, we welcome their private sector experience as we approach our own initial share offering."

The board also confirmed the earlier appointments of company officers: Mr. Gatenby, chairman, president and chief executive officer; Roy E. Lloyd, vice-chairman; Tom J. Gorman, vice-president of finance; S. James Bonny, vice-president of marketing; E. Robert Stromberg, Q.C., a senior partner in the Saskatoon law firm of Robertson Stromberg, as corporate secretary; and Arnold Miller, assistant corporate secretary and vice-president of corporate development.

Mr. Gatenby also provided an update on the merger's progress. "With the enabling legislation in place for both companies, we are optimistic that closing could occur in four to six weeks," he said. He added that an announcement as to the final date will be made as soon as possible.

"Once established, Cameco with head office located in Saskatoon, Sask. will be one of the world's largest suppliers of uranium and uranium dioxide and uranium hexafluoride coversion services," the statement said.

DISTRICT

p.A10 The South Star March 18, 88

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Day - 759-3030
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Elliot Lake makes pitch for taking nuclear waste

BY ANNE ASTLES
Special to the Star

ELLIOT LAKE — The federal government now has official notice that Elliot Lake is interested in accepting low-level radioactive waste.

Mayor Roger Taylor, Chief Administrative Officer Sven Bloom and tow councillors met with federal Energy Mines and Resources Minister Gerald Merrithew in Ottawa recently to present a brief outlining this community's interest in being considered for a low-level nuclear waste storage site.

"The minister was pleased the community came forward to indicate our interest in pursuing the idea of becoming a host community," Mayor Taylor said, adding that Mr. Merrithew indicated Elliot Lake's interest "would be put forward as one of the options when the government discusses establishing a site for low-level radioactive waste."

The brief, prepared by consultants for $12,000, gives a profile of the community and reasons why Elliot Lake should be considered for the site.

"We already have the tailing ponds, the monitoring and support services," the mayor said. "The brief outlines why this community should be considered in the community involvment phase of the site selection process."

Mayor Taylor said, "We would expect increased economic benefits for the community (if Elliot Lake is selected). What and how much will have to be negotiated between the community's local liason group and the task force of the federal government."

He indicated the brief includes a request for establishment of a scientific research facility in Elliot Lake for monitoring and studying the wastes if low level nuclear material is disposed of here. "There will be compensation for the community if this site is chosen."

Taylor

Merrithew

In an earlier interview, Mayor Taylor said no decision had been made on how the issue of economic benefits would be handled. "It will be up to the liason committee." He added the community could charge a dumping fee which would benefit the town. It's estimated there are 20,000 cubic metres of radioactive waste on the Eldorado property in Port Hope alone, enough to fill 11,000 large dump trucks.

The community liason committee — made up of citizens, the mayor, Deputy Mayor Claire Dimock, Coun. Terry Croteau and representatives of Rio Algom Ltd. and Denison Mines — was formed to look at both the negative and positive aspects of the proposal.

The mayor said the brief also assures that "the public process will give everyone an opportunity to have any concerns answered."

Although the minister advised the delegation he would be going to the government with the proposal in April, a final decision on a site will take a few years. "It is pointless to convene meetings to discuss the issue until something materializes," Mayor Taylor said.

Although he is confident most of the people in the community are in favor of the proposal, he admits there are some concerns are being expressed.

Anne Locatelli, who recently retired as Elliot Lake secondary school librarian, said she wants to read 'unbiased reports' on the issue before making up her mind. "It is low-level waste they are talking about now, but could high-level radioactive waste be added later? If that happened I would seriously consider moving." Mrs. Locatelli and her family have lived in Ellior Lake for the past 27 years.

Gail Emmerson, an instructor at Laurentian University and a journalist, questions how this proposal will affect tourism in the area.

Mavis Bohren, of the local Chamber of Commerce office, expressed the feeling of many people in the community. "I want to know more about the issue before I make up my mind."

Mayor Taylor said there will be full public information sessions and hearings before any decision is made. "The study only indicates our interest; we can change our mind any time during the siting process."

The mayor has already met with some local organizations to discuss the propsal and received a favorable response. Gary Croteau, of Croteau Automotive, said he was impressed with the report of the federal Sitting Process Task Force on Low-Level Radioactive Waste and Mayor Taylor's presentation to the Kiwanis club. "The reaction of the members was favorable, almost unanimous."

Only one other community, Chalk River, has indicated an interest in accepting the waste, and Mayor Taylor believes this should eliminate the need for the government to spent up to two years travelling across the country looking for a host community. "We are on record now. It will be up to the task force whether they go looking for more communities or proceeed with the community involvement phase of site selection in the two interested towns."

ALGOMA DISTRICT NEWS

Editor:
Dorothy MacKenzie

THE SAULT STAR — FRIDAY, JULY 11, 1980 17

Waste plan 'needed before nuclear expansion'

TORONTO (CP) — Expansion of uranium plants should be prohibited until someone comes up with a permanent disposal plan for the radioactive waste from uranium mining and milling, a representative of the Canadian Coalition for Nuclear Responsibility said Thursday.

Gordon Edwards, head of the public-interest group, said uranium tailings — which now amount to about 25 million tonnes in the Elliot Lake, Ont., area alone — are a greater threat to public health and the environment than high-level waste from nuclear reactors.

"The quantity of toxic material in the tailings makes the problem a time bomb that may make the Love Canal look like a firecracker," he told the legislature's select committee on Ontario Hydro.

The committee is studying the uranium industry in Elliot Lake, where Denison Mines Ltd. and Rio Algom Ltd. will be booming well into the next century because of long-term contracts to supply nuclear fuel to Ontario Hydro plants.

Tons of dust-like rubble left over from the refining of uranium ore are stored near the plants in dammed-up areas above ground called tailings ponds. Denison's Long Lake basin alone covers about 280 hectares (700 acres).

Edwards said the current above-ground disposal makes low-level waste from uranium mines more accesible to the environment than other kinds of waste. The uranium tailings contain radium — one of the most toxic radioactive substances known to man — and produce radon gas.

He said the tailings remain toxic up to 1,000 years, much longer than other kinds of radioactive waste.

The committee heard earlier this week that the waste ore also contains pyrites which generate sulphuric acid, a substance emitted into the atmosphere where it can combine with moisture and eventually fall as acid rain.

Some radioactivity is contained in water that overflows from the tailings pond into the Serpent River system, most of which is unsuitable for swimming or fishing.

Also, the committee has been told, there are no federal regulations governing disposal of uranium mining and milling waste.

Mining company representatives have disputed whether research in the industry is close to reaching a long-term solution to the disposal problem.

But in the meantime, the amount of waste will increase as the companies expand. Up to 140 million tonnes of waste is expected to be deposited in the Elliot Lake area by the year 2011.

Edwards told the committee the permanent solution, whatever it is, will cost billions of dollars and there is no guarantee that all waste will ever be properly disposed of. He asked the committee to consider seriously a recommendation that expansion be stopped until "the problem is well in hand."

Denison Mines has been expanding its Elliot Lake operations since 1976 and will continue until early 1983.

Masse proposes Shield site for nuclear wastes

OTTAWA (CP) — Energy Minister Marcel Masse wants the government to establish a board to look at the possibilities for nuclear waste disposal underground in the Canadian Shield.

In a letter to Environment Minister Tom McMillan, Masse asked Wednesday that an environmental assessment review panel be set up that also will look at a wide range of other nuclear fuel waste management issues.

He wrote that the long-term management of nuclear fuel waste is a matter of great concern to Canadians and that "the review will provide an opportunity for full public discussions of these issues.

"We want to evaluate our disposal concept and to look at other approaches to long-term management, such as those developed in other countries."

Masse also suggested an independent scientific review group should be formed by the new panel to help evaluate scientific and technical matters and to conduct a thorough review of the safety and acceptability of disposal proposals it is considering.

Masse said that because most of Canada's nuclear fuel waste is created in Ontario, he was making the proposals to McMillan with the full concurrence of provincial Energy Minister Robert Wong.

The idea of sealing the waste material under the impervious rock that sweeps through Ontario and Quebec around James Bay has been part of Atomic Energy of Canada Ltd. thinking for about 10 years.

P13, Sault Star, Sept 29, 88

DISTRICT

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Night - 759-3037

North Shore possible site if study shows need for new nuclear plant

BY ANNE ASTLES
Special to the Star

BLIND RIVER - Residents of the North Shore from Sault Ste. Marie to Sudbury are anxiously awaiting a report by Ontario Hydro on the future energy needs of the province.

The report—to suggest whether the province needs a new nuclear plant—is to be received by the Legislature some time this fall.

Ontario Premier David Peterson says if a new generating plant is required he would like to see it built in the north, possibly near Sudbury to help boost the area's economy.

Municipal officials, economic development officers and chambers of commerce along the Highway 17 corridor from the Sault to Sudbury are working together to ensure government and Ontario Hydro officials are aware of the support of the people for the construction of a power station in the area.

Known as the Dean Lake site and promoted by the group, the area was recommended as a potential energy centre in the late 1970's by Ontario Hydro after a four-year study of three sites along the North Shore.

The 1,600-hectare Dean Lake site, which includes the Dobie Point and Burton Islands land block, is 24 km west of Blind River and 19 km east of Thessalon and runs approximately 12 km along the North Channel shoreline.

Representatives from the various communities learned at an energy conference last June in Sudbury that both government and Ontario Hydro officials were well aware of the potential of the Dean Lake site.

In order to continue to keep the site in the forefront, representatives have formed a united voice to lobby the provincial government.

A sub-committee under the umbrella of the North Shore Heritage Fund Liaison committee will hold its first meeting October 28 to select representatives from the highway 17 corridor and to look at ways to promote the Dean Lake site with the provincial government—if the Ontario Hydro report indicates the need for a new energy centre.

The committee was placed under the umbrella of the Heritage Fund Liaison committee in order to access necessary funding.

Blind River municipal councillors have already indicated their support of the sub-committee and will he appointing a representative to the committee as well as providing financial support. The committee will have its headquarters in Blind River.

Modern pigpen a high-tech habitat

The Canadian Press

Picture the pigpen of today.

No, it's not the spacious white-fenced enclosure of children's storybooks, where hogs grunt contentedly among mounds of mud and buzzing

releases a set amount of food, triggered when a sow wearing a special collar enters a stall. The system ensures that weaker animals don't get shoved aside at the trough.

Some of the changes stem

A two-storey pigpen developed at the Agriculture Canada Animal Research Station outside Ottawa gives pigs more room and, it's hoped, makes them a little more content, said David Fraser, a swine behaviorist at

Play offers a timely trip for audience

Licensing delay won't affect Blind River refinery

BY ANNE ASTLES
Special to the Star

BLIND RIVER — Any delay in renewing the licence for Eldorado Nuclear's waste site at Port Grandby will not affect production at the Eldorado Resources refinery here.

Dave Smith, of Eldorado's Ottawa office, said in a telephone interview, "I don't expect the move by the Atomic Energy Control Board will affect production at either of our plants (in Port Hope and Blind River)."

The AECB advised the company last week that a one-month extension had been granted for the Port Grandby waste site until the end of February. Mr. Smith said the board has asked for additional information concerning the site and what the company plans to do with waste before it will consider renewal of the licence, which expired at the end of 1987.

A group of people in the area of the Port Grandby site have been concerned about the low-level radioactive waste site since it opened in 1955. "They are actively opposing the site at its present location and seeking to have it shut down," Mr. Smith said, adding this is not a new concern.

In the past 10 years, the company has dramatically reduced the amount of waste for burial at the Port Grandby site. "Despite higher production at the Port Hope plant, the emphasis has been on reduction of the amount of waste produced," Mr. Smith said. He explained the company recycles as much waste as possible and as a result has reduced the amount for burial by more than 80 per cent.

Approximately 1,000 tonnes of low-level radioactive waste material is buried at the Port Grandby site each year. The AECB has asked to company to provide alternative options and present them to the board within the month.

The AECB has been looking for a permanent site for low-level radioactive waste. Elliot Lake municipal councillors this month announced they would be willing to have the town become the site of Canada's first permanent site for radioactive nuclear waste.

Low-level radioactive waste would be placed in the tailing ponds of the uranium mines, according to Elliot Lake's chief administrative officer, Sven Bloom.

Irene wants you to
Send her a Xerox copy
of this - V

416-725-1565

DISTRICT

Irene Kock - send
Brennan Xerox copy

Editor: Ed Piwowarczyk
Day - 759-3030
Night - 759-3037

Chamber lobbies for area generating station

BY ANNE ASTLES
Special to the Star

BLIND RIVER - Municipalities and organizations interested in improving the economic development of the North Shore are being asked to work with the Blind River and District Chamber of Commerce to lobby the provincial government to construct a generating station in the Dean Lake area.

Chamber President Keith Hilsinger said letters are being sent to all municipalities, economic development officers and economic development corporations to advise them of developments to date.

The chamber initiated the drive to lobby the provincial government in February following an article in the Toronto Star which quoted Premier David Peterson as saying he would like to see a Northern location for a new generating plant to boost the North's economy. A letter was sent to the Premier and the President of Ontario Hydro from the chamber stating its support of the Dean Lake site.

Renewed interest in Ontario Hydro's Dean Lake site, located on the North Shore of Lake Huron, has already gained the support of a number of municipalities and groups.

Keith Hilsinger

The Heritage Fund Liaison Group recently passed a motion adding its support to the proposal. The motion also declared the group "spokesperson and organizational body for discussions with the province of Ontario."

The group is made up of representatiaves from municipalities across the North Shore, from Blind River to Massey and Elliot Lake as well as the Mississauga and Serpent River First Nations. Chairman of the group, Elliot Lake Mayor, George Farkouh said the group has been working on the proposal for the past six months, but had not made its efforts public until recently.

Mr. Hilsinger said he welcomed the support of the group. "We hope they will join us in our efforts and work through the chamber as other groups are."

In a recent letter to Mr. Hilsinger, the former Minister of Energy, Robert Wong, advised him Ontario Hydro has been asked to provide the ministry with its alternative demand supply plans, including its preferred plan, by the fall of this year.

"These plans will be closely examined in relation to key government objectives such as conservation, protection of the environment, protection of public health and safety and enhancement of the provincial economy. The review of the Demand Supply Plans will provide opportunities for public inovlvement," Mr. Wong's letter said.

He advised the Chamber president the construction of generation and associated transmission facilities by Ontario Hydro is subject to the Environmental Assessment Act. The Environmental Assessment process also provides opportunities for public involvement and formal public hearings.

Jim Rudack, president of the Sault Ste. Marie Economic Development Corporation, has supported the Blind River chamber and believes a generating plant at the Dean Lake site would benefit both the North Shore and Sault Ste. Marie.

"We could create our own golden mile," he said in a recent telephone interview pointing out a major industry is required to accomplish this, an energy generating plant.

Mr. Rudack believes the plant could be built by public or private companies. "If the public sector won't, then the private sector has to".

He has held discussions with Great Lakes Power and Bechtel (Canada) Limited regarding the Dean Lake proposal with a view to selling the power to the the United States, if it is not required for Ontario. "I believe if Ontario doesn't need a plant such as we foresee, then we should look at exporting the energy".

Mr. Wong's letter indicated any plant, private or public, would come under the Environmental Assessment Act with public involvement mandatory. He added "the construction of a nuclear [redacted] station requires the approval of the Atomic Energy Control Board for the design, construction and start up of the plant".

four sets of triplets, all alive and well.

AECL scouting area for site; Espanola mayor is suspicious

THE NORTH SHORE - Espanola Mayor Leo Foucault says he is suspicious about why AECL (Atomic Energy of Canada Limited) representatives have been talking to local town councils.

AECL recently met with councils in Webbwood, Massey, McKerrow and Espanola explaining how it hopes to get rid of nuclear garbage.

"What we're doing is explaining the nuclear waste management program," Jean Pouliot, Public Relations officer for AECL said.

However, Mayor Foucault has different ideas. "I get the feeling there is more to this than they're leading us to believe," he said.

Although the AECL only wants to "brief" town councils, "I think the public should be aware of everything that's going on, "Mr. Foucault said.

Attempts were made to have the AECL attend a public meeting and present their case in Espanola, but they said they were "too busy", the mayor said.

According to the AECL's Mr. Pouliot, public meetings are not "our philosophy".

Town councils have given the AECL reps "pretty good" receptions, Mr. Pouliot said. "We've cleared up a lot of misconceptions" he said.

The short term plan is to explain the waste management program, but the long term aim of the AECL program is to find a permanent disposal site for nuclear waste in one of some 1,000 potential sites in the Canadian shield, Mr. Pouliot said.

AECL officials assured the councils that the crown corporation is only looking for technical information about rock formations. It is not looking for a dump site, AECL officials told the councils.

Apparently, the rock found in the Canadian Shield is suitable for the storage of nuclear wastes. At the present, the AECL is looking for spots where they can carry out further research.

Some of their research takes the form of aerial reconnaissance followed by taking rock samples. The AECL hopes to set up a storage vault for research purposes by 1985, but Mr. Pouliot said there will be no actual wastes put in the vaults for storage until the year 2,000.

"I can't see bringing waste from down south and dumping it up north," Mayor Foucault said. "I spoke to people around Espanola and they're not making any decisions until they get more information."

"We're not very keen about having it around here...people are just a little too worried about it" Webbwood clerk Judy Van Norman said.

Experimental drilling has already started in Atitokan, White Lake and Chalk River but some areas want nothing to do with the nuclear garbage dump.

"There was a resolution in Sudbury saying they don't want anything to do with that problem" Mr. Pouliot said, adding that Timmins has refused permission for a fly-over test fearing another Three-Mile Island episode.

MARCH 26 - 1980 Expositor

Foster opposes dumping

OTTAWA--"We're not willing to accept the proposition that uranium be mined in the North and sent south for refining" Dr. Maurice Foster, Algoma MP, said regarding the building of the Eldorado Uranium refinery in southern Ontario.

"We've asked the government to review the project to see if it would be feasible to move it to Blind River" Dr. Foster said.

Although site preparation and some engineering have gone on in the south, Dr. Foster said he would like to see the refinery built in the North where the uranium is mined.

The former Conservative government decided to go ahead with the project in the south because "their pursuit for Northern Development doesn't seem to be very great," Dr. Foster said.

There has been no decision on the refinery thus far, however, Dr. Foster said, "I assume the review will take place fairly speedily."

Globe and Mail

TUESDAY, MAY 12, 1981

Eldorado late in reporting rising uranium dust level

By KIRK MAKIN

Eldorado Nuclear Ltd., a federal Crown corporation, did not tell federal and provincial authorities about increasing emissions of uranium dust falling on Port Hope, Ont., until they had reached about 25 times the previous maximum level.

The Ontario Government will complain to the federal Government about the company's behavior and will question how Eldorado could have failed to spot the problem during routine inspections, according to an Environment Ministry official.

"We feel we should definitely have heard earlier," the official, Peter Hughes, said yesterday. "We feel Eldorado's inspection and monitoring should catch this sort of situation."

Kim Shikaze, regional director of Environment Canada, went further. "I think it's inexcusable," he said. "I don't know what goes on in their minds. They just seem to go from problem to problem . . . . All I do know is they knew about the problem before April 25 — and quite a bit before."

Mr. Hughes, the Peterborough district officer for the provincial Environment Ministry, said he has never heard of uranium dust emissions exceeding 10 or 11 milligrams per square metre per month before. "Usually, it's between one and five, and up to 10."

But readings the ministry received from its own laboratory last week showed accumulations of 65 in November, 1980; 17 in December, 1980; 46 in January, 1981; and 243 in February.

Eldorado didn't mentioned the problem to the ministry until April 25. A week later, the company informed the federal Government through the Atomic Energy Control Board.

The culprit is thought to have been a faulty dust collector in one of the refinery's stacks. The plant was shut down for three days last week to repair the collector.

Eldorado says that March levels of uranium dust emissions were about 80 and now they are normal.

Both levels of government are to some extent dependent on Eldorado for information on its emissions. Although the provincial ministry does some simple measurements itself, its results are often long in coming from the lab.

David Smythe, a senior AECB official, said the board should have been informed by January or February, when Eldorado's own laboratory analyses would have shown the rising levels.

"The control board can't be down there poking into every nook and cranny of the plant," he said. "But we do share some of the responsibility for not ensuring Eldorado had procedures to ensure these levels would not have been reached without action being taken to correct it."

He said the AECB may establish strict procedures on steps to take when dust emissions rise.

Mr. Smythe said the emissions do not present a short-term health threat but are "unacceptable over the long term." However, Mr. Hughes said the province has asked its own health officials to see if there could be any health effects on Port Hope citizens.

Uranium can be a chemical hazard to the kidneys as well as a radiation hazard.

The information has come out at a particularly embarrassing time for Eldorado. The company is facing stiff opposition to the construction of a uranium refinery in Blind River, largely over its history of secretiveness and sporadic environmental problems.

Howard Collins, a company official, said yesterday that the company did not realize it had a uranium dust emission problem until it got the measurements of February's dust deposits.

Mr. Collins wouldn't supply figures for any previous months, but he maintained the company told the provincial Environment Ministry as soon as it could. "I've heard of no dissatisfaction from the provincial authorities."

He also said the highest emissions, which occurred in February, still fell under the internationally accepted standard for dust emissions.

The AECB's Mr. Smythe disputed this. "Indications are that in February the permissible concentrations were certainly exceeded," he said.

WAKE UP PEOPLE OF ALGOMA-MANITOULIN

ONE DAY AFTER a Public Information Meeting in Blind River (May 11, 1981), at which Eldorado assured us that they are a good corporate citizen building safe and sound refineries, and the Atomic Energy Control Board staff reiterated that they are the effective "policemen" of the nuclear industry, the Globe and Mail published the above news article about recent events in Port Hope.

For the past number of years, environmentalists in Port Hope and the Citizens Monitoring Committee, have been frustrated by repeated incidents like this most recently reported one and by the ineffectiveness of their appeals for action to halt this dangerous situation in their area.

The people of Blind River and District are not likely to be spared this frustration in dealing with Eldorado once a refinery is operating on their doorstep. As the accidental spills and emissions become more frequent, the apparent lack of meaningful control over Eldorado will become more real for those who live in this area.

Once an accidental release of radioactive waste has contaminated our air, land, or water - that fact cannot be altered by any citizens monitoring committee. An exposed population can do little else but hope it will not happen twice and nature will inevitably bequeath the burden to future generations.

Take off the gold studded blinders that Eldorado issues routinely with the rest of their public relations material! The cost to your health and your environment will never equal the economic benefits you have been promised.

Algoma Manitoulin Nuclear Awareness

Sud. Star Nov. 29/66

Lake Huron Threat Of Contamination Disclosed by Doctor

ELLIOT LAKE — While most Elliot Lake residents appeared unmoved by the latest governmental report on the levels of radioactive contamination in the waterways of Elliot Lake and district, a Blind River doctor, Jean Pigeon, Sunday sounded a warning that the discovery of uranium and subsequent methods employed in the disposal of radioactive wastes had opened a "Pandora's Box."

"It is about time," he told The Star "that most people knew what is impending, for the geographical situation of Elliot Lake makes the problem more serious than has so far been explained."

Pigeon enlarged on his comment by saying that the Elliot Lake area is a vast reservoir of uranium, and that the spread of radioactive contamination through the waters of the area and into the Serpent River watershed gives rise to greater implications.

"I am concerned about the big lakes," he said, "particularly Lake Huron, for the contamination cannot be held back for any great period of time—it will trickle down and will certainly reach Lake Huron. After a few decades I predict there will be an excessive amount of radiation in this lake . . . and it will stay there.

"There is a danger here we cannot afford to let develop."

SEEKS STUDIES

Pigeon called for urgent and extensive studies into present methods of control of radioactive mine wastes and insisted that unless tailings are directed back deep into the ground, contamination would continue and would reach the Great Lakes.

He stressed that as yet, no one was really aware of the possible future dangers of radioactive contamination. For this reason, he said, immediate attention to the problem was imperative.

"This is a different problem than any other," he noted, "and we must look ahead, for one thing is known and that is once contaminated, water will stay that way for many thousands of years."

The doctor, who is president of the Blind River Liberal Association, said that his bringing to light long held theories concerning the possible pollution of the Great Lakes transcended any thought of politics. He repeated that the whole question of closer study was one of the utmost urgency.

He estimated that the amount of radium thus far released was close to 50 pounds. As much, he said, as has been refined throughout the entire world.

SAID REASONABLE

On the question of drinking water, Pigeon conceded the levels of radioactive contamination fixed as "safe," were quite reasonable.

"However," he said, "it is unfortunately an accumulative process and while I think the water can be drunk at the present time, if the pollution continues where will you get the water from?

"The amount of radium people are getting is like a geometrical progression and is compounded. The water is getting more contaminated and radiation is building up. If nothing is done immediately it will compound."

Comment in Elliot Lake itself was sparse. Those residents who did seem concerned with the details of the most recent report were of the opinion that any possible health hazards through the drinking of radioactive contaminated water over a long term were not known.

Chairman of the board of trustees, Charles Forman, and other civic officials, however, drew attention to the fact the report did not state the picocurie count at the present moment in Elliot Lake — source of the community's drinking water.

Forman referred again to the letters which have been written by the board to the OWRC requesting immediately the picocurie count for Elliot Lake.

SEVEN PICOCURIES

"The last we heard was in April 1965," he said, "and at that time the level was seven picocuries per litre."

Tests carried out and detailed in the report show levels of 67 picocuries in Pecore Lake, 36 picocuries in Quirke Lake and 28 picocuries in Nordic Lake. Workers at the Nordic minesite have been drinking water from these sources for some time.

Dr. Charles Stewart said today, "the figures in this latest report are much higher than we had been led to believe previously. I do not think there is any need to worry for the present, but I hope and expect there will be another more comprehensive report in the near future.

"This should take into consideration the long - term effects, and the effects this contamination may have on the children being brought up in Elliot Lake."

WANT ANSWERS

Although there were no apprehension in Elliot Lake, some residents openly queried the suggestion in the board report that no danger existed to people drinking contaminated water "over a short term."

Most wanted to know how many years was "short." Many have been resident in the town for eight years.

Concensus of opinion was summed up by a resident who desired to remain anonymous.

"They don't know what the danger is," he said, "because they have no experience of what contamination will or will not do. If we are all going to be here for years it's time someone started looking for another source for the town's water supply."

Ltd., Thunder Bay; Eddy Forest Products, Espanola; Denison Mines Ltd. and Rio Algom Mines, Serpent Harbour; Polysar Ltd., Sarnia; and Allied Chemical Canada Ltd., Anderdon.

In the U.S., they are: Reserve Mining, Silver Bay, Minn.; Outboard Marine Corp., Waukegan, Ill.; Abitibi Paper Co., Alpena, Mich.; U.S. Steel, Gary, Ind.; Bergstrom Paper Co., Neenah, Wis.; Ford Motor Co., Dearborn, Mich.; Great Lakes Steel, Wyandotte, Mich.; RMI Sodium and Chlorine Plant, Ashtabula, Ohio; and Scott Paper Co., Oconto Falls, Wis.

In addition, the board, a joint Canada-U.S. body, recommends an outright ban on mirex, a long-lasting poisonous chemical used as a pesticide and a fire retardant.

It expresses concern as well about new and yet undiscovered toxic substances in the Great Lakes system that may have repercussions on human health and warns that public health agencies are not sufficiently informed about the potential dangers.

Groups and Organizations Opposed to Eldorado Nuclear Locating in Blind River

(1)-Algoma-Manitoulin Federation of Agriculture
(2)-Manitoulin Tourist Association
(3)-Algoma-Manitoulin Cream Producers
(4)-North Channel Commercial Fishermen
(5)-Manitoulin Island Anglican and United Churches
(6)-Algoma-Manitoulin Nuclear Awareness
(7)-Education Co-ordinator for Indian Reserves
(8)-Blind River and District Concerned Citizens
(9)-Algoma-Manitoulin Native Women
(10)-Jesuit Fathers
(11)-Robinson Huron Treaty Association-18 reserves
(12)-United Chiefs and Council of Manitoulin-6 reserves
(13)-Ojibway Cultural Foundation
(14)-Native Women of Ontario
(15)-Union of Ontario Indians
(16)-Metis and Non Status Indians
(17)-C.U.P.E. Ste. St. Marie
(18)-Municipality of Assiginack
(19)-Municipality of Carnarvon
(20)-Billings Township
(21)-Gordon Township
(22)-Town of Massey
(23)-Western Manitoulin Board of Trade
(24)-Manitoulin Ministerial Association
(25)- Lyons Memorial United Church
(26)-T.E.A.C.
(27)-Womens Caucus for the Northern Environment
(28)-Gordons Womens Institute
(29)-Espanola womens Institute
(30)-Silverwater Womens Institute
(31)-Manitoulin Nature Club
(32)-Saginaw Yacht Club
(33)-Algoma-Manitoulin Milk Producers
(34)-Canadian Coalition for Nuclear Responsibility
(35)-Kagawong St Paul's United Church Women
(36)-Immaculate Heart of Mary Church-West Bay
(37)-Barrie Island Womens Institute
(38)-Ice Lake Womens Institute

FRIDAY, FEBRUARY 6TH, 1981
MANITOULIN MUNICIPAL ASSOCIATION SPECIAL MEETING
WEST BAY, ONTARIO

SUBMISSIONS TO MANITOULIN MUNICIPAL ASSOCIATION MEMBERS

FROM CONCERNED CITIZENS OF MANITOULIN ISLAND
AND THE NORTH SHORE

RE: NUCLEAR INDUSTRY AND PROPOSED URANIUM REFINERY
IN BLIND RIVER

Blind River Refinery
- Main Concerns

Dr. Gordon Edwards
Canadian Coalition for Nuclear Responsibility

(1) There is still no satisfactory method for the safe permanent disposal of the radioactive waste material,(called raffinate), produced by the uranium refinery. When Eldorado originally applied to build their new refinery at Port Granby, Ontario they were turned down by the Federal Environmental Assessment Panel for precisely this reason, as indicated in item #4 of the Uranium Tailings and Nuclear Waste Disposal.

(2) Having lost the first round in its struggle to build a new refinery, Eldorado quickly devised an alternate scheme. This time they chose three sites instead of one (Hope Township, Dill Township, and Blind River), and they proposed to store the raffinate onsite in steel drums without attempting to dispose of these wastes at all. Instead, Eldorado proposed to eventually truck the raffinate back to Elliot Lake where it would be dumped in with the 80 million tons of highly toxic radioactive sands and slimes commonly known as uranium tailings. (after removing some of the residual uranium from the raffinate to help defray the expense of transportation).This time, the Federal Environmental Assessment Panel gave its approval for Eldorado to go ahead, despite the fact that there is no satisfactory disposal method for uranium tailings either (as indicated by items #1,2, 3,5, and 7 in "Findings...").

(3) Also the second judgment rendered by the Environmental Assessment Panel contradicts the first judgment, and constitutes a travesty of common sense. "Out of Sight, Out of Mind", is not an appropriate philosophy when dealing with some of the most potent cancer-causing substances known to humankind, such as radium and radon gas. Eldorado should be required to develop at least one method for safely disposing of the waste, instead of being allowed to simply dump it in with even more toxic and more voluminous wastes which are not at all adequately disposed of. If we as a society persist in procrastinating, we will never develop adequate methods for dealing with such toxic waste materials, and the Love Canal debacle will become commonplace and widespread in the future. It is our neglect. Incidentally, by transporting the raffinate over highways and byways, the chance of accidental spills and leakage is of course greatly increased.

(4) At the Port Hope refinery, about one ton of very fine radiactive dust escapes into the atmosphere through the baghouse filter each year. When inhaled, this dust lodges in the deepest

(4)contd.
recesses of the lung, where it is quite effective in causing lung cancer. It can also be absorbed into the blood stream and transported to other organs where it can cause other types of cancer. It has been known for a long time that inhalation of radioactive dust is much more effective in causing cancer than external irradiation by x-rays or gamma rays. Indeed, recent evidence indicates that it is even more dangerous than was previously thought. One study done in Colorado in 1977 revealed that there were more than 500 extra cases of cancer downwind from an area which was contaminated with fine radioactive dust, compared with what would have been expected on the basis of the health records for neighbouring populations which were not exposed to this dust. Earlier estimates by nuclear officials had indicated that there might be one extra cancer death, at most, as a result of exposure to the dust.

(5) Two doctors in the Port Hope area have independently and publicly stated that they seem to have an excessive number of cancer patients residing in Port Hope. Eldorado has hotly denied these claims, and has even complained to the Ontario College of Physicians and Surgeons about "unprofessional behaviour" on the part of the doctors, who only wanted to call attention to the problem so that a proper epidemiological study could be undertaken. Such a study has now begun, but it will be several years before the results are available. It would be wise for the residents of Blind River to delay the construction of the refinery until the results of this health study are available. If there is an excess of cancers in the vicinity of the Port Hope refinery, this may very well lead to a reconsideration of the siting and/or the adequacy of the filtering system in the proposed Blind River plant.

(6) There seems to be no urgent need for the new refinery, since electrical needs in Ontario are presently glutted by a 45% overcap acity in electrical supply (above and beyond peak demand). The Darlington station has been postponed several times, and in December 1979 the Select Committee on Ontario Hydro Affairs recommended an immediate freeze on the issuing of contracts for the construction of Darlington. Meanwhile, Ontario Hydro has revealed that all of Ontario's operating reactors will ha e to be shut down for a year or more so that they can be "retubed" at a cost of more than $500 million dollars. The world price of uranium is softening as a result of an international slowdown in nuclear development, and as a result, the uranium contracts signed more than a year ago by Ontario Hydro may have to be re-negotiated. For all these reasons, a delay in the construction of the refinery would be sensible- not only to give Eldorado time to discover a waste disposal method and to publish a comprehensive health study, but also to see where the uranium market is going (since it is an extra ordinary unsettled market at the present time).

(7) Meanwhile, Blind River could stimulate its local eocnomy by strongly promoting the implementation of Recommendation 6-5 of the final report of the Elliot Lake Environmental Assessment Board (May 1979):

(7)contd.
THE BOARD RECOMMENDS THAT THE DEVELOPMENT OF THE TOWN OF BLIND RIVER SHOULD BE ENCORAGED BY THE PROVINCE TO GIVE INDIVIDUALS AN OPTION TO LIVING IN ELLIOT LAKE. THIS OPTION SHOULD BE ENCOURAGED WHETHER OR NOT A DECISION IS MADE TO PROCEED WITH HIGHWAY 555

By having workers from Elliot Lake live in Blind River, we could avoid the ugly prospect of having the wives and children of uranium workers living in radioactively contaminated houses in Elliot Lake, which, according to published data from the Ontario Ministry of Housing, could lead to an 11% increase in the lung cancer rate.* Such an arrangement would therefore not only provide a shot in the arm for the Blind River economy, but would also rescue the uranium workers' families from having to live in an unhygienic environment.

*Other evidence, outlined in Dr.Edwards paper "Estimating Lung Cancers" indicates the people living in these homes will likely experience a 30% increase in the lung cancer rate-that is, 17 extra lung cancer deaths per thousand population, over and above the 54'expected' lung cancer deaths per thousand population. More recently, Dr. Victor Archer, Medical Director of the U.S. National Institute for Occupational Safety and Health, has estimated an extra 18-42 deaths per thousand for people living in contaminated Elliot Lake homes.

No. 369

NUCLEAR ARMS & NUCLEAR POWER
THE CONNECTIONS

Barry Childers Talk at Zimmer Demonstration
Moscow, Ohio 11 November 1979

"It's all of a piece." That's the phrase my grandmother used to describe a situation where things were closely inter-related.

Nuclear arms. And nuclear power. It's all of a piece.

It all began with nuclear arms. Their use, in 1945, at Hiroshima and Nagasaki, shocked the world. And the resulting guilt on the part of the many who were associated with that undertaking no doubt provided much of the impetus for the race to "harness the atom for peaceful purposes."

In 1946, the Atomic Energy Agency was created—by the Atomic Energy Act—the most radical and far-reaching piece of legislation ever enacted by our congress. It gave sweeping authority to this administrative agency, creating, in effect, a government monopoly on the sources of atomic energy. It's powers encompassed military as well as civilian applications, and both basic and applied research. And the power to restrict the dissemination of information went far beyond the development of atomic weapons, including data—quote—"relating to the production of fissionable material, *Or* the *USE* of fissionable material in the production of power." Never before had the freedom of information so necessary to the advancement of science *AND* the growth of a healthy democracy been so restricted.

And so, the development of nuclear arms and nuclear power were joined.

To the credit of some of our more far-sighted leaders, efforts *were* made to place the development of atomic energy under international control, through the United Nations. Unfortunately, this effort failed. And when it failed, President Truman, though still leaving the door *open* for international control, said that we would now bend every effort toward "maintaining the leading position of the United States in the knowledge of nuclear energy and its military applications."

This we have done. With results that have raised doubts in the minds of many, not only about the military uses, which have brought us to a point where enough nuclear arms exist in the world to destroy it many times over, but about civilian uses as well. The dreams of nuclear developments that would solve the problems of poverty and hunger in the world are giving way to nightmares about epidemics of cancer and birth defects.

And still the two march hand in hand.

One of the reasons you so often hear proponents of nuclear power say that power plants cannot explode like nuclear bombs is because that is one of the few ways in which they clearly differ. Let's look instead at some of the ways in which they are the same.

The initial step in production, the mining of uranium, is the same. And the data now coming in on the effects on the health of the miners and those living nearby are bringing about revisions in our thinking on the dangers from radiation at the *Front* end of the fuel cycle.

The *Last* step, the disposal of radioactive wastes, is the same. Which at the moment means temporary measures which are *so* unsatisfactory that the governors of the 3 states where most of it is being stored have either stopped or sharply curtailed shipments. Assurances that the permanent solution to the problem is just around the corner are wearing a bit thin after 30 years. And continuing to produce and bury these wastes in containers that future generations will have to dig up and contend with is unconscionable.

The dangers to workers involved in the processing and utilizing of these radioactive materials is the same. As are the risks to the general population when they are transported from place to place. And accidents are becoming more and more commonplace as the number of installations increases. One of the more unfortunate aspects of the nuclear business is that people seldom fall down and die, or even bleed, from their exposure to toxic levels of radioactivity. They just develop cancer, or sustain genetic damage, the effects of which may not show up for many years. And then the industry can argue that something else caused them anyway. The tobacco industry has been using this kind of argument fairly successfully for a long time!

Both the nuclear arms and nuclear power industries have always been quite dependent on *our* tax dollars for their profitability. It took the government a number of years to persuade the utility companies to enter in to the development of nuclear power, and they were finally persuaded primarily by financial incentives, such as research assistance, tax breaks, fuel enrichment at cost, and protection against full liability in case of accidents. These are things *you and I* pay for through taxes, and they are seldom included in calculations of the costs of electricity to the consumer.

And many of the companies involved in both industries are the same. One of the more enterprising, General Electric, is involved in the mining *and* milling of uranium, the fabrication of fuel rods, the production of plutonium, the building of reactors, the storage of wastes, *and* the manufacture of weapons components!

And the mind-sets of many of the people in both industries is the same. "Bigger is better," and whatever the problem, there is a technological fix that will solve it. And progress is measured by profit margins and GNP rather than the quality of people's lives.

And when all is said and done, the bottom line is the same. *MONEY*. Billions and billions of dollars' worth. It was the lure of vast profits that brought business in, in this economy of ours that institutionalizes that which most of us would consider a character defect—*GREED*. And the fact that nuclear power has not turned out to be as profitable as expected is probably the best thing those of us who are opposed to it have going for us.

Suppose that national security were considered *so* important that one would be expected to serve—and consider it a privilege—at minimum wages, working for corporations that supplied our weapons at cost. What do you think *that* would do to weapons development?!

Or suppose that the energy crisis was *so* critical that the same would apply to utility companies and the builders of power plants. Stockholders and company executives would also be asked to pull in *their* belts—instead of you and me. How do you think *that* would effect the development of nuclear power?!

And before you get too encouraged about some of the results of the President's Commission report, remember that we are dealing with corporations whose activities extend around the world. During the period following the accident at 3-Mile Island when there were 9 cancellation orders for nuclear power plants in this country, there were *16 NEW* orders overseas. Mostly in developing countries. A moratorium here would simply build up the pressures for foreign sales. And it would not be the first time that U.S. corporations have dumped unsafe merchandise elsewhere when it became unacceptable to sell it here.

The risks of stolen radioactive substances being used for terrorist purposes or diverted to weapons programs in other countries is present in both industries, and the fact that any country with nuclear power also has the potential to develop nuclear weapons is a sobering one. Did the news that South Africa may have exploded a bomb last week scare you? How would you feel if you heard that South Korea was developing one? Or Taiwan? Or Iran? It could happen. And aside from this, just the spread of nuclear power plants around the world is a threat to all of us in the *long* run. Radioactivity is no respecter of national boundaries.

Another connection between nuclear weapons and nuclear power is their effects in congress. While it is not *quite* as fashionable nowadays to support nuclear power as it is to support the MX missile and other exotic weapons systems, it is still a rare congressman who will actively oppose either. Campaign contributions from both sectors in the coming elections will no doubt be sizable.

Finally, the development of both nuclear arms and nuclear power have another thing in common. The pressures for secrecy, security and control are eroding the foundations of our democracy. This was seen clearly by Aldous Huxley who, in *1946*, in his introduction to *Brave New World*, said; (quote)

"It is probable that all the world's governments will be more or less completely totalitarian even *before* the harnessing of atomic energy; that they will be totalitarian during and *after* the harnessing seems almost certain. Only a large-scale popular movement toward decentralization and self-help can arrest the present tendency toward statism."

Well, this popular movement *has* begun! We are a part of it. And we have much work to do. □

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John Gofman:

ALMOST FOREVER

I should like to outline why a moratorium on construction of any further nuclear power plants plus a phaseout of existing plants is essential.

There seems to be a widely-held view that "reasonableness" argues for the discovery of an acceptable middle ground between the opponents and proponents of nuclear power as one of our energy options. I cannot accept this view, since there does not appear to be any reasonable prospect that a middle ground can be found.

The essence of the problem is exceedingly simple, arising from the immutable laws of physics. If we generate nuclear power to meet any significant proportion of our energy use, we create astronomical quantities of radioactive fission products and plutonium-239. Since no serious opponents or proponents of nuclear power contest the extreme toxicity of long-lived radioactive fission products and of plutonium-239, the problem becomes straightforwardly, whether or not these substances can be virtually perfectly isolated from the biological environment almost forever.

Let us examine this "almost forever" requirement.

For the prominent long-lived fission products, such as Strontium-90 and Cesium-137, with half-lives of approximately 30 years, the requirement is roughly 99.99% containment (isolation from the biosphere) for some 1000 years.

For plutonium-239, with a half-life of 24,000 years, the requirement is roughly 99.999% containment for some 250,000 years.

The proponents of nuclear power recognize these requirements and say they will provide the technical modalities required to achieve the necessary isolation. In taking this position they demonstrate a total divorcement from common sense and the real world. They ask society to believe a miracle will be accomplished.

It would be difficult enough, given the frailties of all high technology, to promise a technical solution to the requirements. But it is orders of magnitude more difficult to promise this given the frailties of human societies and political entities.

In the past 60 years we have experienced two full-scale World Wars, numerous lesser but bloody conflicts, an acceleration in revolutionary activity, and almost unbounded guerrilla terrorism within and between countries. Who is so all-seeing as to predict that suddenly societies will become tranquil and totally peaceful? This would certainly be a requirement for societies basing their energy supply upon nuclear power.

In the USA, for example, a fully developed nuclear power industry will mean the commercial annual handling and transport of some 600,000 p pounds of plutonium-239 to the environment in certain

In the USA, for example, a fully developed nuclear power industry will mean the commercial annual handling and transport of some 600,000 pounds of plutonium-239. The consequences of escape of 10 to 100 pounds of plutonium-239 to the environment in certain forms can be beyond comprehension -- for hundreds of thousands of years. Can anyone accept the credibility of those who casually reassure us plutonium-containment will be performed flawlessly, under all circumstances essentially forever?

And can anyone accept the credibility that guardianship of the radioactive fission products, in whatever storage form is decided upon, will be 99.99% perfect for 1000 years?

It is time to dismiss the nonsense of those who promise such miracles as being in the same class as the therapeutic promises of nostrum vendors in travelling carnivals.

Since the promise of such miracles is patently ridiculous, it follows that going ahead with nuclear in advance, for the hundreds and thousands of generations of living beings who will follow those alive today. What right do we have to build in the prospect of irreversible health consequences (genetic injuries and deaths, cancers, leukemias) at a level that could negate all public health advances of the past few centuries?

Any statement that the nuclear power industry has thus far accomplished containment is simply false. The nuclear industry monitoring has varied from unreliable to non-existent. There is little reason from experience to believe the nuclear industry even knows what level of containment it has achieved thus far.

Were the problem one of better technical fixes it might be credible that the learning curve would ultimately lead to an adequate solution. But the problem is not one of technical fixes; rather, it is one of predicting almost perfectly the history of human societies for the next several millenia and hundreds of millenia. Any reasonable person would use common sense in appraising the promises of the latest vintage of super crystal ball gazers.

Finally, the nuclear power proponents end up with the argument that society must accept this monstrous risk because "there is no alternative". It so happens that a considerable body of scientific and engineering opinion holds that such alternatives as solar energy are both technically and economically feasible, particularly when coupled with even rudimentary measures of energy conservation, to solve our energy requirements.

If reasonableness is desired by the proponents of nuclear power, it must start with them. They have mounted an unconscionable propaganda campaign to ridicule alternative sources of energy and to prevent a full, open objective evaluation of both the feasibility of the technologies and of the economics aspects. Such an objective evaluation is urgently required and must be achieved. But the situation is not so urgent that we must accept nuclear power first. By no means.

It is clear that the nuclear option represents the last gasp of a hopeless world. The proponents of nuclear power recognize this, but they hope for a miraculous technical fix that can abolish the realities of human history.

Far better for the opponents and proponents to set aside the nuclear controversy through a total moratorium on nuclear power for now. All the efforts should then be expended in a serious evaluation of alternative energy sources with prospects brighter than a contaminated planet. There will be plenty of time to choose a horrible alternative later, but I doubt extremely seriously this will be necessary.

A nuclear reactor disaster could happen in Canada

By DAVID LISAK
of The Gazette

It could have happened in Canada.

The worst accident in the history of the U.S. nuclear power industry occured near Harrisburg, Pa., this week, sending clouds of radioactive gases up to 32 kilometres away.

Late yesterday, the emergency continued as nearly a million people in the four counties surrounding the plant were threatened with evacuation because of the "uncontrolled" leakage of the gas.

The same type of accident could happen to any of the 10 CANDU reactors now operating in Canada, says Ziggy Damaratzki, director of the Reactor and Accelerator branch of Canada's nuclear regulating body, the Atomic Energy Control Board.

"Despite the many differences between the American units and our CANDUs, the principles are essentially the same and the kind of problem they're into there can also happen to a CANDU," Damaratzki told *The Gazette* yesterday.

'Not that rare'

"It's not that rare an event, so the system is designed to cope with it," he added.

Damaratzki also confirmed that the CANDU's emergency cooling system — used to prevent the kind of "fuel failure" that happened at Harrisburg — has been found to be less effective than was thought when the CANDU was designed.

To understand what is happening at Harrisburg — and why the same thing could happen to the Gentilly II CANDU reactor scheduled to begin operating next year at Trois Rivieres — one has to understand how a reactor works.

It all starts with the atom, which is made up of a nucleus containing neutrons and protons, and is surrounded by an equal number of orbiting electrons.

Earlier this century, scientists discovered that uranium atoms have two peculiar properties: They are radioactive, meaning they shoot off some of their neutrons into surrounding space, and they have a rare cousin (or isotope), called uranium-235.

Nuclear 'indigestion'

U-235 is special because its nucleus will "swallow" slow-moving neutrons that have been radiated from another atom. Swallowing this extra neutron gives the U-235 atom a case of indigestion. It literally bursts under the strain and splits into two parts. This is called fission.

Fission releases a tremendous amount of energy as well as two more neutrons which then create a chain reaction by striking other atoms, causing further fissioning.

The secret to the process is getting the neutrons to slow down enough to split atoms instead of passing right through them. This is done by surrounding the atoms (the uranium fuel, with a "moderator," a substance that slows them down.

Heavy water

The moderator in a CANDU reactor is heavy water, an isotope of normal water. It's the best moderator discovered so far because it slows down the neutrons without absorbing very many. This makes it easier to keep the chain reaction going because more neutrons are kept in circulation. It also allows the CANDU to use regular uranium fuel.

The U.S. reactors use normal water, which absorbs more neutrons, so they have to use "enriched" uranium fuel — uranium that has been processed so that it has a higher concentration of the fissionable U-235 isotope.

So, just as oil is the fuel that powers most conventional electrical power stations, uranium is the fuel that drives the nuclear plant.

A nuclear reactor is a furnace that produces heat through the fissioning of uranium atoms in its core. The heat is used to boil water, which creates steam, which turns a turbine, which turns a generator, which produces electricity.

Key to safety

The key to running a safe nuclear reactor is being able to take away the heat from the core as fast as it is being produced by the chain reaction. This is done by piping water, or heavy water in the case of the CANDU, through the core. This cooling system keeps the core from over-heating and transfers the heat to the generator to make electricity.

If something happens to stop or drastically slow down the cooling process, the chain reaction will produce enough heat to melt the steel alloy fuel jacket *within seconds.*

China Syndrome

Within minutes, the entire core will "melt down," creating the ultimate in nuclear reactor disasters — the China Syndrome, so named because theoretically the core would melt its way right through the earth and come out on the other side, in China.

A more likely outcome, scientists say, is that radioactive gases produced by the melting core would explode under the compression and shoot out the top of the reactor building.

If this were to occur at Gentilly II when it was running at capacity, the quantity of radioactive gases released would be about 1,000 times greater than that produced by the Hiroshima bomb in 1945.

The Harrisburg accident is far from a meltdown, but it still has U.S. scientists worried about the deadly Iodine, Krypton and Xenon radioactive gases that have escaped from the plant since Wednesday morning. It also raises questions about the efficiency of accepted safety features in preventing this and more serious accidents.

Faulty valve

Based on discussions with U.S. scientists and press accounts of the accidents, Domaratzki believes the accident was started by a faulty valve which prevented the reactor from feeding the boilers. This slowed down the rate at which heat was being removed from the core and caused an automatic shutdown of the reactor.

Residual heat and a continued low-level chain reaction, however, were enough to cause a buildup of steam pressure in the reactor since the coolant was no longer being taken away. This automatically opened a pressure relief valve to let some of the steam escape.

But the valve stuck open and let out a continuous flow of the steaming coolant. With the coolant escaping as steam, the coolant level began to drop, causing a second, and more serious, heat buildup in the reactor.

This triggered the Emergency Core Cooling System, which sprayed the reactor with a secondary water supply and stopped the rapid rise in temperature. But an operator turned off the system too soon, allowing the heat to build up a third time.

It was then that some of the steel alloy vessels containing the Uranium fuel melted, allowing the radioactive gases to escape and contaminate the water coolant.

Domaratzki, quoting a U.S. scientist, said that at this point, for an as yet unexplained reason, a sump pump in the reactor building switched on automatically and began pumping quantities of radioactive coolant into an adjoining building. The steam from this water, mixed with the radioactive gases, is what escaped into the atmosphere.

The problem for the Harrisburg technicians now is that a bubble of gas has formed in the pipes that carry coolant around the reactor core. This is obstructing the cooling process and creating a risk that the cooling system will break down completely. In that case, a meltdown would be a possibility.

It was an improbable series of events, but it is just this type of unlikely occurence that has anti-nuclear scientists worried. They say the accepted industry and government probability figures cannot possibly account for all

of the weird combinations of technical and human errors.

A catastrophic core meltdown, they say, could happen as often as once every 40 years for every 100 reactors operating.

Less dangerous, but more likely than a meltdown is a fuel failure, such as happened at Harrisburg. And Domaratzki admits that "there's not much dispute" that the CANDU's emergency cooling system cannot prevent fuel failures in all cases as it was designed to.

But Domaratzki says the CANDU's containment system — the barriers that prevent radioactivity from getting out into the atmosphere — would prevent "excessive" doses of radiation from reaching the public.

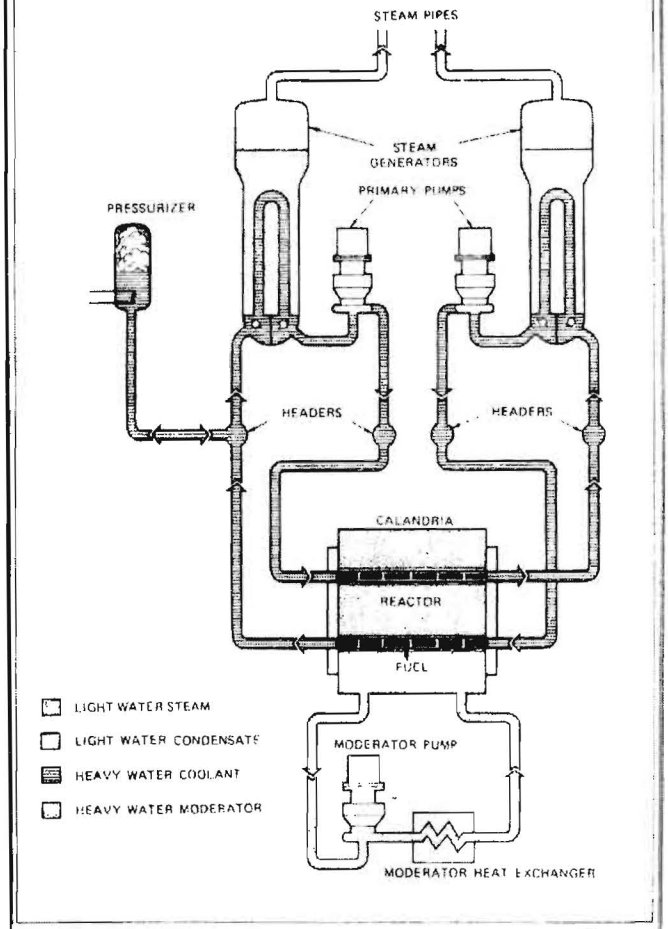
Radiation levels

Acceptable doses are defined by the Atomic Energy Control Board, and the designers of each CANDU reactor have to prove that in the event of any accident, the acceptable doses would not be exceeded outside the walls of the plant.

But even these doses are in dispute. Some radiation physicists contend that low-level doses of some types of radiation are more dangerous that high-level doses, and in any case the cumulative effects of radiation increase the risks of cancer.

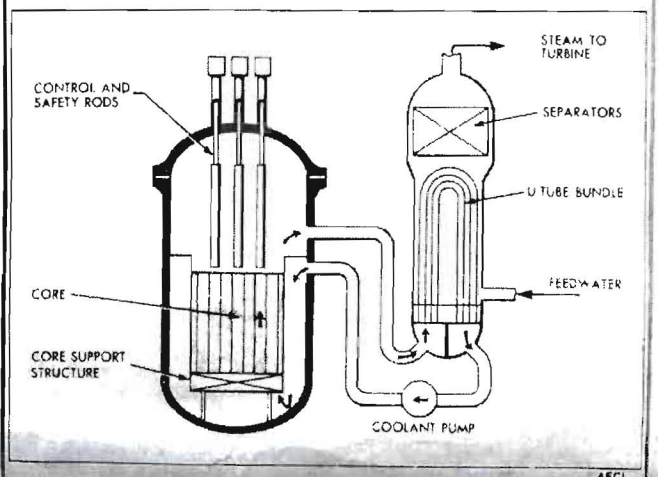
Heating up the debate further was the leak last summer of several AECB documents which show the agency is considering raising the acceptable radiation levels for certain types of accidents.

HOW THEY WORK



AECL diagram

The flow in a CANDU reactor



AECL

A pressurized water reactor like the one at Harrisburg

The Gazette

Saturday, March 31, 1979

live in harmony with our fellow man and the unique environment that sustains us on this small planet. 4

Dr. David Lilienthal, another Nobel prize winning physicist and also the founding chairman of the United States Atomic Energy Commission appeared before a Senate committee and reflected on the first 30 years of nuclear power:

> ...Once a bright hope shared by all mankind, including myself, the rash proliferation of nuclear power plants is now one of the ugliest clouds hanging over America.... ...Proliferation of capabilities to produce nuclear weapons of mass destruction is reaching terrifying proportions. And now, the prospect of the reprocessing or recycling of nuclear wastes from scores of atomic power plants is close upon us. ...We have to decide now what we can do, now, within our own capabilities, to prevent a very bad situation from becoming a disastrous and irreversible one...
>
> If a great number of countries come to have an arsenal of nuclear weapons, then I'm glad I'm not a young man, and I'm sorry for my grandchildren. 5

Ontario is on the verge of launching an extensive expansion program of nuclear electricity generating stations. There is currently one large nuclear power station in operation in Ontario near Pickering. There is another large station under construction and nearing completion in Bruce County. Together these two stations contain 8 nuclear reactors and generate over 5000 megawatts of electrical power. Before the turn of the century, Ontario Hydro intends to build over 40,000 additional megawatts of nuclear generating capacity, engough to firmly establish Ontario as one of the most nuclear dependent economies in the world. This report examines the possibility that to attempt such a course would be a terrible mistake.

The purpose of this report is to present the results of slightly less than one year of research into the issues relevant to the

Abandon sieves and petro-pigs—Lovins

Better way to get off oil than going nuclear, Opposition told

By Jeff Passmore

TORONTO — If an Ontario provincial election is called this spring, the Opposition is going to be well briefed in the area of renewable energy and conservation.

Both NDP leader Michael Cassidy and Liberal energy critic Julian Reed, as well as new Toronto mayor Art Eggelton, participated in a public presentation by world famous energy analyst and proponent of soft energy, Amory Lovins, held here at City Hall, January 7th.

Lovins, long time opponent of nuclear power, told his audience that economics alone should be enough to retire this energy source. "The slowest and costliest way we know to generate electricity is building thermal plants," said Lovins.

"About one/tenth of all our energy use can economically be electric," he said. "Ontario would have a large surplus with just their existing hydro. No thermal plants - new or existing - need be in operation. If we wanted more electricity beyond what we got through efficiency improvements, then we could go to co-generation and perhaps to some photovoltaics. But the electricity we've already got is twice what we need. And new power plants are costing four times the current OPEC price for oil in heat equivalent."

Off-oil

Commenting on the best way to get off oil, Lovins said we "should stop living in sieves and stop driving petro-pigs."

CREN Photo

At Toronto City Hall: Left to right - Ont. NDP leader Michael Cassidy, Mayor Art Eggelton, Alderman Richard Gilbert, Amory Lovins, Hunter Lovins, Toronto Hydro's Bill Peden and Ont. Liberal energy critic Julian Reed.

"The energy problem we have is one of heat and liquid fuels - not of electricity. Suppose we went in one giant leap to making 50 mile a U.S. gallon vechicles. That's well within possibility. A turbo-charged diesel Rabbit gives about 60 and they've made bigger cars that get 70 or 80. The extra cost of scrapping all the petro-pigs and retooling Detroit to produce this car would be about $100 billion or $770 per vechicle. At to-day's gas prices the payback would be 16 months," said Lovins.

"If we knew we only had six months of oil left," he continued, "what could we do that's fast enough to get off? We certainly couldn't respond with power plants. But we could build stills, weatherstrip, caulk and add solar greenhouses. Soft technologies make us much more resilient to all sorts of surprises."

"This is already happening by private initiative - from the bottom up. Washington and Ottawa will likely be the last to know," Lovins said. "Central management is more a part of the problem than part of the solution. The municipal level is where it could all happen — where people see the energy problem as their problem.

Lovins remarked on the absense of the Ontario Conservatives who declined the invitation, saying, "I'm talking about traditional conservative economic theory which, if it was followed, would put an end to nuclear. If the technology is uneconomic and unnecessary, we don't have to argue about whether it is safe. And as to whether we need energy growth to sustain economic growth, in 1979, 97 per cent of American economic growth came from efficiency improvements and conservation. Only three per cent came from the energy supply side," he said.

"Such efficiency improvements would cut all U.S. imported oil by 1990 — before any syn fuels or power plants could deliver one BTU. If Ontario Hydro keeps building thermal plants, the province will go broke."

Responding to Lovins, Cassidy said he both lived in a sieve and drove a petro-pig. He blamed the former on bad building codes and justified the latter saying "at least it is built by North American auto makers and not someone else, elsewhere."

He agreed with Lovins that building the Darlington nuclear plant scheduled to come on stream in 1992, was planning for power that we would not need. "The $500 million a year we spend there could be invested in energy savings," he said. "Putting the money into Darlington will financially prevent Hydro from becoming a conservation utility."

Load factor

Reed said he felt Lovins was "preaching to the converted", adding that he drove to the meeting in his wife's "petro-mouse". "The energy crisis in Ontario is certainly not at the wall plug. It is potentially at the gas pump," he said. "Taken on an annual basis, Ontario Hydro's load factor is only 50 per cent of their installed capacity."

"The utilities only mandate is to produce energy at cost — not even at what cost! They need to be given a new mandate. They need to look at energy from an end-use standpoint," said Reed. "Ontario can achieve the goals that Lovins sets out — and that's within the goal of Ontario self-sufficiency."

Mayor Eggelton, who is also Toronto Hydro Commissioner, said he was "keenly interested in what Lovins had to say."

"Consumption of energy is largely a local problem and Toronto will look at ways to promote conservation and solar in new construction. There are a lot of challenges and opportunities."

NO. 340

Medical Implications of Nuclear Power

by Dr. Helen Caldecott

Nuclear power poses the greatest public health hazard the world has ever encountered because of the inevitable contamination of the biosphere with plutonium and radioactive wastes. Cessation of all forms of nuclear power is the ultimate form of preventive medicine. The fuel cycle of nuclear power plants is complex, but not too difficult to understand. It has many biological and medical implications which must be understood by the average person in the street as well as by the politicians who make most important decisions for society. In this article, the fuel cycle is described step by step and the medical dangers arising from each step are explained.

1. MINING — Uranium is the fuel for atomic reactors. When it is mined from the ground, it emits a radioactive gas called radon, which is often inhaled into the lungs of miners where it converts after four days to lead 210, which remains radioactive for more than 100 years. Because radiation in the body is carcinogenic, it has been discovered in the USA that up to 20 percent of uranium miners die of lung cancer over a 20 year period of mining.

2. MILLING — After the uranium ore is mined, it is then milled and refined. Thousands of tons of waste ore (tailings) are discarded and left lying in huge heaps on the ground. The tailings generated to provide uranium for nuclear power in the USA over the next 24 years may produce 45 cases of lung cancer in the world per year for tens of thousands of years. The causative agent is again the gas radon, which is continually emitted from the waste uranium in the tailings.

3. ENRICHMENT AND FUEL FABRICATION — The uranium is then enriched and is fabricated into fuel rods which are transported to the nuclear reactor, and placed in the reactor core. A typical 1000 megawatt reactor contains 526 bundles and each bundle consists of 12 rods. The radioactive uranium produces heat by fission which is utilized to generate electricity. But during this process, uranium is converted to many radioactive products, which are the ashes or wastes of nuclear power. Once a year, one quarter of the rods are removed from the reactor core because their generating life has ceased. The rods are both thermally and radioactively very hot and just be stored on racks in cooling ponds containing water. They now contain a very large number of biologically dangerous radioactive materials including strontium 90, iodine 131, cesium 137, and plutonium.

4. REPROCESSING — Eventually it is hoped these rods will be transported in caskets to a reprocessing plant where they will be dissolved in nitric acid. The plutonium is purified and removed from the solution in powder form as plutonium dioxide. It will then be used as either fuel for atomic bombs or fuel for "breeder nuclear reactors" (reactors which breed plutonium). It is at this point in the fuel cycle that the greatest dangers arise once the plutonium is separated. Plutonium is an extremely potent cancer producing material, appropriately named after Pluto, the god of Hell. It enters the body of children and adults by inhalation of contaminated air, where it is deposited in the lung. Because of its potent cancer producing properties, the acceptable body dose has been set at less than one millionth of a gram (an invisible particle). There is some evidence this level has been set too high. Cancer will not appear until 15 to 20 years after inhalation. By extrapolation, one pound of plutonium, universally dispersed, would be adequate to kill every man, woman and child on this earth. Most of the plutonium manufactured in the fuel cycle will be in powdered form, and by the year 2,020 in the USA, the industry will have produced 30,000 tons of plutonium, and there will be 100,000 shipments of material annually on the highways of the USA. Because plutonium is the basic material of atomic bombs, it is more valuable than heroin on the black market, and therefore vulnerable to theft by terrorists, racketeers, non-nuclear nations and deranged individuals. Reactor grade plutonium makes inefficient but dirty bombs. It also has a curious physical property of igniting spontaneously when exposed to air, thereby producing tiny aerosolized particles which are dispersed by wind currents and available for inhalation by animals and humans. One could envisage disastrous consequences if a truck were to crash and discharge some of its deadly contents. Plutonium must be transported very carefully, packed in small quantities in separate containers because only ten pounds is "critical mass," which means that a spontaneous atomic explosion could occur if ten pounds or more were compacted together in a finite space.

The most important property of plutonium is a half life of 24,400 years (half life of a radioactive substance is the period of time for half of a given quantity to decay, and a similar period for half of the remaining radioactivity to decay, ad infinitum). Therefore, radiation from man-made plutonium will exist on earth for at least half a million years. To illustrate the enormous medical problems arising from the physical properties of plutonium, if an individual dies of lung cancer engendered by plutonium, the body will return to dust, but the plutonium lives on to produce cancer in another human being.

Although it will be used as "fuel" in breeder reactors, more plutonium will be produced than will be

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utilized. So there will be a continual net increase in plutonium manufactured. The nuclear industry has not yet decided what to do with all this plutonium — there are no safe methods of disposal and storage available at this point in time.

5. WASTE STORAGE — After the plutonium is extracted from the radioactive waste, very dangerous biological elements remain, which have no further use and are pure waste products. This remaining solution contains some plutonium, radioactive iodine, strontium 90, cesium and many other highly toxic radio-nuclides. Because it is extremely hot, it must be stored in tanks which are continuously cooled for years. Every month numerous leaks of radioactive wastes are reported in the USA, in quantities from several gallons to 200,000 gallons. When this dangerous fluid leaks, it will inevitably contaminate the water system of the planet, and the various elements are taken up by the food cycle. Radioactive iodine, strontium 90, and cesium are absorbed by roots of grass and vegetables and are further concentrated in the flesh and milk of animals when they eat the grass.

Iodine 131, strontium 90, and plutonium are concentrated in milk, both human and animal. Cesium is concentrated in muscle (meat) and plutonium is also concentrated 1,000 times in fish compared to the background water concentration. These substances are invisible, because they are tasteless and odorless and it is impossible to know when one is eating or drinking or inhaling radioactive elements.

6. BIOLOGICAL PROPERTIES OF RADIOACTIVE WASTE — All cells of the body have a central nucleus which contains genes, the basic inherited material which controls all our characteristics (color of eyes and hair, size, facial characteristics, enzyme systems, etc.). Genes are changed by radioactive particles. Cells and genes which are actively dividing (as in fetuses and young children) are most susceptible to the effects of radiation. If a gene which controls the rate of cell division is altered by radiation, the cell may divide in an uncontrolled fashion to produce cancer and leukemia. It may take from 15 to 30 years before cancer appears after the cell is exposed to radiation. If a gene in the sperm or egg is altered by an inherited disease, or the baby may appear normal, but will transmit the damaged gene to future generations, to become manifest in later years.

Radioactive iodine is absorbed through the bowel wall, and migrates in the blood to the thyroid gland, where it may produce thyroid cancer. Strontium 90 is also absorbed through the bowel after being ingested in contaminated milk, and is incorporated in bone because it chemically resembles calcium. This element causes osteogenic sarcoma, a highly malignant, lethal bone tumor, and leukemia, a cancer of the white blood cells. The blood cells are formed in the bone marrow, and are therefore subject to the effects of radiation from strontium 90 in the adjacent bone. Cesium 137 is deposited in muscles of the body, where it can produce malignant changes.

Plutonium is one of the most carcinogenic substances known. It is not absorbed through the bowel wall, except in infants in the first four weeks of life, when it is ingested in milk. As previously described, infants are extremely sensitive to the toxic effects of radiation. The route of entry of plutonium is by inhalation of contaminated air into the lungs. Plutonium is also absorbed from the lungs into the blood stream, where it is carried to the liver (to produce a very malignant liver cancer), to bone (where like strontium 90 it causes osteogenic sarcoma and leukemia), and it is selectively taken up from the circulation by the testes and ovaries where, because of its incredible gene changing properties, it may cause an increased incidence of deformed and diseased babies, both now and in future generations. Plutonium also crosses the placenta, from the mother's blood into the blood of the fetus, where it may kill a cell responsible for development of part of an organ, e.g. heart, brain, etc., causing gross deformities to occur in the developing fetus. This mechanism for production of fetal deformities is called teratogenesis and is different from the deformities caused by genetic mutation in the egg or sperm, because although the basic gene structure of the cells of the fetus is normal, an important cell in the developing fetus has been killed, leading to a localized deformity (similar in action to the drug thalidomide).

Massive quantities of radioactive wastes are being and will be produced in the future. The safe storage of waste is unsolved, and even if there were a solution, we could not predict a stable society or world for over half a million years; we could not guarantee incorruptible guards or moral politicians and we certainly cannot prevent earthquakes, cyclones, or even wars. As waste is leaking now, so inevitably will it leak in the future. We could therefore predict epidemics of cancer and leukemia in children and young adults, and an increase in inherited disease. It is also inevitable that plutonium will be stolen and utilized for atomic weapon production. (Two tons of plutonium are presently unaccounted for in the USA.)

It has been claimed that 80 to 90 percent of all cancers may be caused by environmental pollutants. There was a five percent increase in cancer in the USA in the first seven months of 1975, and a total three percent rise in 1975. Governments spend millions of dollars searching the cause of cancer, leukemia and inherited disease, but simultaneously spend billions of dollars in an industry that will directly propagate these diseases. ###

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Over 4 million gallons

Nuclear dumps leak into Lake Ontario

photo: Paul McKay

October 3,1980. Eldorado Nuclear trucks unload wastes into Port Granby dump.

by PAUL McKAY

THE ONTARIO PUBLIC Interest Research Group office in Peterborough has obtained documents which show that a series of unreported spills this spring released more than 4 million gallons of radioactive effluent into Lake Ontario.

According to the reports, the treatment systems at two nuclear waste dumps near Port Hope failed during a severe regional storm in March 1980 and released contaminated water with concentrations of radioactive raduim-226 as high as 46 times the Ontario drinking water standard.

The two dumps are maintained by Eldorado Nuclear Ltd., the federal crown corporation which refines all uranium mined in Canada. In official exchanges between Eldorado Nuclear and the Atomic Energy Control Board, it was revealed that additional spills took place at both nuclear waste dumps within the following month, and that Eldorado deliberately discharged nearly ½ million gallons of contaminated liquid waste directly into Lake Ontario during attempts to repair the Pt. Granby dump system.

The reports also confirm that in addition to these specific accidents, Eldorado discharged approximately 19 million litres of treated effluent from the Port Granby dump alone into Lake Ontario during March 1980. All this effluent contained levels of radium in excess of the Ontario drinking water standards.

One of the documents, a semi-annual report outlining Eldorado's progress in de-commissioning the Port Granby nuclear dump, uncovers serious, ongoing flaws in the present waste management system. It reveals that the groundwater which percolates through the Port Granby Bluffs and subsequently flows across the beach into Lake Ontario is contaminated with radium. This indicates that a significant amount of leachate is not being collected, even when the waste treatment system is working properly.

The report also confirms that an additional 1,300 tons of refinery process wastes and garbage, much of it radioactive, were dumped at Port Granby by Eldorado during the first six months of this year. The Port Granby dump contains 500,000 tons of radioactive wastes, contaminated equipment, and an unknown quantity of toxic industrial wastes including calcium and ammonium nitrates. The southern perimeter of the 28-acre dump is less than 25 metres from the shore of Lake Ontario.

The collection reservoir at Port Granby, 10 miles west of Port Hope, also overflowed on March 21, discharging 3,600 cubic metres of highly contaminated effluent into Lake Ontario. The volume was enough to cut three foot deep erosion marks into the beach 20 metres from Lake Ontario.

Following the heavy rains of April 13, Eldorado officials discovered that silting had clogged the intake screens at Port Granby and had caused a major pump to burn out. This, and the failure of a back-up pump to operate, meant that the east treatment system was inoperative for three weeks.

During subsequent repairs, Eldorado deliberately redirected 2,000 metres of contaminated effluent into Lake Ontario. As well, the contaminated silt was used as open pit cover within the Port Granby dump. There was no indication as to who undertook this clean-up and repair, or under what conditions they were conducted.

IT IS CLEAR THAT Eldorado has no responsible method for disposing of their voluminous wastes and it is clear that developing a safe, permanent system is not one of Eldorado's priorities. It should be their first priority.

Yet within the past two months, Eldorado has announced plans to build another larger nuclear fuel refinery at the edge of the Port Hope harbour — without demonstrating a permanent disposal method, or even acquiring a disposal site.

In light of this information, the Ontario Public Interest Research Group has asked the AECB not to consider any construction licences for Eldorado's proposed refinery until a safe, permanent disposal method has been demonstrated, until an approved site has been acquired, and until the radioactive wastes from Pt. Granby, Port Hope, and Welcome have been deposited there.

The Port Granby dump contains 500,000 tons of radioactive wastes, contaminated equipment, and an unknown quantity of toxic industrial wastes. The southern perimeter is 25 metres from Lake Ontario.

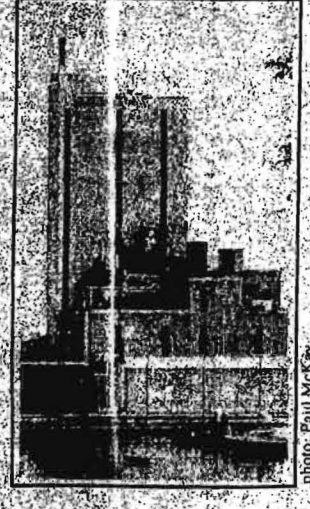

photo: Paul McKay

Eldorado: Arrogance unlimited

IF THERE IS ONE Crown corporation in Canada that doesn't need to tarnish its already well-established (and well-deserved) image, it is Eldorado Nuclear, Ltd., the federal corporation which refines all the nuclear fuel produced in Canada. As the company which achieved international notoriety in 1976 for its role in the extensive radioactive contamination of Port Hope* and as a past partner in Canada's illegal uranium cartel**, Eldorado's reputation is that of being long on arrogance and short on answers.

Little has changed in the past five years. Three weeks ago, Eldorado appeared before the Ontario Select Committee on Hydro Affairs, and gave a "we admit we've made mistakes, but that's all over now" pitch that had some committee members in a swoon of admiration. The next day, however, the Select Committee travelled to Port Hope to visit, firsthand, the "Town that Radiates Happiness."

They left obviously shaken by both the conditions at the two nearby radioactive dumpsites, and the damning evidence presented by concerned Port Hope residents. They did not leave with the pretty picture Eldorado had painted a day earlier.

Unfortunately, however, the Select Committee has little jurisdiction over Eldorado at all. In fact, events over the past year have raised the question of whether *anyone* has the authority to compel Eldorado to clean up its act.

For instance, after they were charged with allowing the spill of radioactive liquid wastes into Port Hope harbour in 1978, Eldorado reacted by claiming in court that they were exempt from provincial environmental standards. The case is presently being appealed by the Ontario Ministry of the Environment.

And the Federal agency which supposedly *does* have the authority to compel Eldorado to obey environmental standards, the Atomic Energy

continued page 4

After Eldorado was charged with spilling liquid radium into Port Hope harbour, they argued in court that they were exempt from provincial environmental standards. The judge agreed, and dismissed the case last May.

*see *Birch Bark* #1, * see *Birch Bark* #2.

continued from page 1

Control Board (AECB) has acted more like a reluctant accomplice than an independent regulatory board.

Besides failing to prevent the widespread contamination that took place in Port Hope during the past three decades, the AECB has, in the recent past, back-tracked repeatedly on two crucial matters: their 1976 order to decommission the Pt. Granby nuclear dump, and the responsible control of contaminated wastes from Eldorado's present operations.

THE TWENTY-EIGHT ACRE Pt. Granby dump lies in rolling agricultural area 10 miles west of Port Hope, and 20 metres from the Lake Ontario shoreline. From 1955 to 1976 Eldorado dumped over 500,000 tons of low level radioactive wastes into Pt. Granby ravines as well as contaminated scrap metal, and toxic industrial wastes such as calcium and ammonium nitrates.

By the AECB's own admission, Pt. Granby has been an environmental disaster. As early as 1960, primitive control dams had collapsed, contaminated sludge has swept down ravines onto the Lake Ontario beach, and concentrations of radioactive radium in the groundwater leaving the site were four times the provincial drinking water standard.

In June 1976, the AECB ordered Eldorado to prepare the site for final decommissioning. Since then, the AECB has awarded Eldorado six licence extensions, and thousands of additional tons of radioactive waste have been dumped there by the company.

Effluent from the Welcome and Pt. Granby nuclear waste dumps continues to filter into Lake Ontario. An AECB official, Geoffrey Knight, recently estimated that water contaminated with radium, uranium and arsenic was leaching into Lake Ontario at a rate of 15 gallons per minute, or 8 million gallons per year. This spring, after severe flooding in the region, the treatment ponds at both dump sites overflowed, sending a total of over 4 million gallons of contaminated effluent directly into Lake Ontario (see accompanying story).

As well, occasional spills and accidents at the two Eldorado refineries in Port Hope continue to pollute Lake Ontario — the most recent known example being the accidents in December, 1978 and January, 1979 which released 200-300 gallons of liquid radium and other industrial wastes in the Port Hope harbour.

The AECB has already invested over four year and $5 million removing hundreds of thousands of tons of radioactive residues from Port Hope homes, schools and ravines. Over 105,000 tons were transferred to the Chalk River nuclear dump before it was declared full in 1979. Since then, the radioactive waste has been temporarily stored at the Port Hope filtration plant.

photos: Paul McKay

Contaminated overflow from this pond went into lake Ontario

THE KEY ISSUE IN this whole ugly episode is the radioactive waste that Eldorado generates. These wastes will remain toxic for thousands of years, they come in extremely large volumes, and nobody has any idea about what to do with them.

In 1976, after intense public pressure, the AECB announced its decision to begin closing the Pt. Granby dump. As a result, Eldorado had no place left to dispose of the thousands of tons of radioactive wastes it creates each year. In 1977 Eldorado announced its intention to build a new uranium hexafluoride refinery and waste management facility in Pt. Granby.

Now Eldorado has announced an even more dangerous proposal, apparently convinced the public is too demoralized to resist them any longer

Unlike radioactive wastes, however, this plan proved to be short-lived. In May 1978, after an exhaustive set of Environmental Assessment Hearings, Eldorado's proposal was rejected on the grounds that it represented an industrial intrusion into a Class 1 agricultural area, and that the waste disposal system — a modified municipal garbage dump design — was completely unacceptable.

The news brought a bitter response from Eldorado, but the small band of farmers and citizens in the area know as SEAP (Save the Environment from Atomic Pollution) were overjoyed. The federal Panel's report had vindicated their passionate opposition to Eldorado, and the nightmare was apparently over.

Not quite. Within weeks Eldorado had mounted a new campaign to secure a site near Port Hope, with help from the local Chamber of Commerce and Allan Lawrence (PC Durham). Simultaneously, MP's from northern Ontario began pulling political strings in an attempt to have the refinery located in either Blind River or Sudbury. Eldorado began shipping 5000 gallons of radioactive liquid wastes to northern Ontario to be reprocessed at uranium mills and subsequently dumped in with radioactive mine wastes.

Five months later, the Environmental Assessment panel was hauled back to Port Hope to consider Eldorado's revised proposal: building the refinery 2½ miles east of the Pt. Granby site, with *no* permanent waste disposal program whatsoever.

Incredibly, the Panel approved the new Hope Township site *and* the sites at Blind River and Sudbury, leaving the final site selection up to the federal Cabinet.

The Panel's approval of the Hope Township site came as a dramatic shock to the exhausted and demoralized members of SEAP. The decision contradicted the Panel's earlier commitment to protecting the agricultural character of the area, and actually rewarded Eldorado for presenting no waste disposal concept instead of a shoddy one. The growing scent of burnt pork on barrel staves was enough to make their eyes water.

Soon after the May, 1979 federal election, and Allan Lawrence's swearing-in as Solicitor General, the Clark Cabinet approved the Hope Township site. By Christmas Eldorado had spent, as estimated, $3 million preparing the site for their new $100 million refinery, and the issue seemed settled.

However, when the Conservatives were suddenly swept from office in February 1980, an immediate freeze was ordered on construction at the Hope Township site. In June, the Liberal Cabinet announced it was moving the new refinery to Blind River, a small town on the north shore of Lake Huron. Blind River is, coincidentally, the riding of long-time Liberal politician Maurice Foster.

THE SUBSEQUENT, UNABATED furor that erupted in Port Hope after the announcement convinced the Liberal Cabinet to do the only honourable thing: give them *each* a new refinery. But along the way someone, somewhere, decided to play musical refineries, and Blind River ended up with a uranium *trioxide* plant, a project no Environmental Assessment Panel has even considered.

In July 1980, Eldorado suddenly announced that the approved Hope Township site was no longer acceptable to them, *and that they planned to build the elusive uranium hexafluoride refinery within one-half mile of downtown Port Hope, on the edge of Lake Ontario, with no Environmental Assessment!*

This whole charade raises more questions than it answers:

- Why is Eldorado doubling its refinery capacity when the world market for nuclear reactors is stagnating?
- Why is Eldorado now so intent on building the new refinery in Port Hope when they have already invested at least $1 million in a site less than five miles away?
- Why is the AECB now willing to accept virtually no protective "buffer zone" at the Port Hope site, when it was a condition of licencing at the rural Hope Township site?
- Most importantly, where are the thousands of tons of radioactive wastes Eldorado will produce each year going to be dumped if the Port Hope site is approved?

EVEN IF THESE questions remain unanswered for the moment, at least one thing is clear: Eldorado Nuclear Ltd. has made a complete mockery of the Environmental Assessment process. And the company has reaffirmed its reputation as the most arrogant and irresponsible government agency involved in nuclear energy in Canada. With corporations like AECL and Ontario Hydro in this same game, that's saying a lot.

In the past three years this Crown corporation, using public funds, has displayed a utter contempt for public accountability by steamrolling over the opposition, and ignoring everyone else — including the Ontario Ministry of the Environment, the Atomic Energy Control Board, and the federal Environment Panel.

Now they have announced an even more dangerous proposal, apparently convinced that the public is too exhausted and too demoralized to resist them any longer.

They must be stopped.

Photo: Eldorado Nuclear

Eldorado's refinery control room

NUCLEAR SACRAFICE: A NORTHERN LEGACY

3/4 inch video tape; 55 minutes
Produced by Algoma Manitoulin Nuclear Awareness

Appearances by: (in alphabetical order)

Sister Rosalie Bertell: geneticist

Ed Burt: Algoma Manitoulin Nuclear Awareness founding member

David Campbell: singer/songwriter

Paul Carlos: vice president of Rio Algom, an Elliot Lake mining company

Bob Gallagher: Mayor of Blind River, Ontario

Linda Leighton: environmentalist, resident of Port Hope, Ontario

Dr. E. Newbery: University Professor and member of Project Ploughshare an international disarmament organization

George Purvis: commercial fisherman

Homer Seguin: United Steel Workers of America representative in Elliot Lake

Dr. Frank Sommers: member of Physicians for Social Responsibility

Dr. Ernest Sternglass: physics professor and expert on the health effects of low level radiation

For more information contact:

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NUCLEAR SACRAFICE: A NORTHERN LEGACY

Northern Ontario is great expanses of wilderness forest, bountiful lakes and rivers, rocky outcroppings, patches of tamed farmland and is dotted with villages, towns and thriving cities. The allure of clean air, wide open spaces and chrystal blue waters attracts many people from the densly populated areas of the south in all seasons.

But Northern Ontario is also a facade. Along the north shore and in the waters of Lake Huron is the federal constituency of Algoma-Manitoulin. Within the boundaries of this 13,200 square mile area there is a pollution which has already deadened parts of the environment and which threatens to grow and jeopardize the future of its land, water, wildlife and people.

The polluter is the nuclear industry. From the mining of its raw fuel uranium to the permanent disposal of its deadly spent fuel containing Plutonium, the nuclear industry is making its presence felt in every corner of this riding.

Some have come to believe that Algoma-Manitoulin is a designated nuclear sacrafice area. It is because of this belief and a deep concern for the future that the film "Nuclear Sacrafice: A Northern Legacy" was made.

THE MINES

It begins deep within the uranium mines of the Elliot Lake area. The high risk of lung cancer in uranium miners has long been documented but compensation for the victims of this work related affliction is slow in coming and is a major concern of United Steel Workers of America local representative Homer Seguin. Seguin discusses the many aspects of uranium mining safety and reveals his displeasure with both mining companies and government in their handling of the existent dangers.

Above ground the problem of mine waste - tailings - comes to light. The mismanagement of these mountains of radioactive sands has been responsible for the demise of the Serpent River system which branches out in all directions from Elliot Lake to its emptying into Lake Huron. The system became the sewer for these tailings which spilled into its waters and contaminated this vital source of drinking water for the native and white communities along its course.

And still the controversy rages. Rio Algom vice-president, Paul Carlos, minimizes the tailings problem in an interview and maintains that the levels of radiation are so low that they are insignifigant. But the hazards of low-level radiation are given much attention and concern by others including Dr. Ernest Sternglass, a noted expert on the subject; Homer Seguin, who represents many hundreds of people who live with the tailings at their back door, and Ed Burt, a Manitoulin Island farmer and founding member of Algoma-Manitoulin Nuclear Awareness (AMNA), who expresses the sentiments of people throughout the area who are wondering what effect radon gas from these wastepiles is having on their health even many miles downwind.

The visual impact of abandoned mines with broken and untended fencing and mile upon mile of sprawling tailing sands spilling into waterways is overwhelming from air and land. The dust blows in all directions as the winds change. A tour of the waste area, which companies and government maintain are being managed, is eyeopening.

THE REFINERY

In 1978, Environmental Assessment hearings were held in Blind River (40 miles southwest of Elliot Lake) into the possibility of locating a uranium refinery in this area. The hearings were barely advertised and poorly attended. Blind River was only one of three sites being considered and few expected it to be chosen.

With the federal Conservatives in power, Hope Township (just outside of Port Hope, Ontario) was chosen for the siting of the refinery. Only months later the Liberals were back in power, the decision ammended and Algoma-Manitoulin, political seat of long time liberal, Maurice Foster, was promised a refinery. Another refinery will be built in Port Hope.

The rules have changed since the original hearings - exact locations, production and other aspects of the refinery plan have been revised but pressure from environmental groups has failed to get a new hearing.

AMNA has sponsored demonstrations, information days and panel discussions to air the many concerns over the locating of another potential nuclear polluter in the area. Sister Rosalie Bertell, world reknown geneticist, provides a sobering view of the health effects of low level radiation and Linda Leighton, environmentalist and Port Hope resident, gives an inside story of life in a refinery town and the arrogance of its major employer, Eldorado Nuclear Ltd.

The people of the area are allerted to the possible hazards from uranium dust emissions and the threat of accidental contamination of their waterways - noteably the Mississaugi River and ultimately the north channel of Lake Huron upon whose shores the refinery will be built. But the mayor of Blind River has opened his arms to Eldorado Nuclear Ltd. and has gratefully accepted generous grants from the company in lieu of taxes. Blind River can now build a new recreation facility for its citizens.

THE WASTE DISPOSAL DILEMNA

As the film is being put together, Atomic Energy of Canada Ltd. (AECL) has just recently announced plans to conduct research into a permanent disposal site for high level nuclear reactor waste at East Bull Lake just north of Massey (about 45 miles east of Blind River). Although the citizens of Massey have been told this is only a research program and that no decision as to permanent siting will be made for at least 10 years - there are no guarantees that East Bull Lake will not be chosen for this dubious distinction.

The test drilling is to take place in the area of the Sable River System from which the town of Massey takes its drinking water. Over 80 percent of the population of this community have since stated their objection to the research in a municipally sponsored vote and several other communities in the area have rallied to support them. The federal and provincial members of parliament have refused to represent the interests of this clear majority and have instead given the AECL project their blessings.

THE FUTURE

A quick glance at a map of Algoma-Manitoulin reveals the pervasiveness of the industry and its impact upon the area. And to continue the spread of nuclear technology throughout the area - Ontario Hydro has purchased a large parcel of land on the north shore near Dean Lake which many fear is to be used as the future site of a nuclear reactor.

In summing up the legacy - the ultimate nuclear weapons connection is made, for without a thriving nuclear power industry the production of nuclear weapons becomes more difficult. According to many concerned groups and individuals the production of nuclear power is only the tip of the iceberg in the nuclear debate. The real threat is global annhilation from nuclear war.

And the people of Algoma-Manitoulin are sitting on the tip of that iceberg. The extraction of a natural resource - uranium - is the first step in the deadly cycle. The nuclear industry is rooted here and the seed has been planted for the legacy to follow.

-30-

EDITORIAL PAGE

Manitoulin time bomb of Canada?

Editor's Note: The following guest editorial was written by Ed Burt of Ice Lake at the invitation of the Recorder, following the announcement that Eldorado would locate on the North Shore.

Mr. Burt has been in the business of farming most of his life and because he toils on the land has developed a deep respect for it, and a concern with anything that might threaten life on Manitoulin as it is today.

Many years ago Mr. Burt became involved in the nuclear story and readily admits he knows very little about it. However he has attended meetings to no end on this subject, conventions all over the country and talked and corresponded with scientists all over the world. Mr. Burt's admission that he does not understand all about the nuclear story only serves to tell the general public that it is something that we should start to be concerned about.

It has been said that we are being led blindly into a situation that may well have some devastating effects on Manitoulin Island. Too many questions have not been answered and it appears that the whole mess has become wrapped up in politics, and it may not be in the best interest of the residents of Manitoulin Island.

Did you ever read the story of the Titanic? If not, did you hear about Mr. Carter's attempt to rescue the hostages in Iran? Or maybe how we put DDT on the Moon, or how we blew up two cities in Japan in a matter of seconds? All these events were modern technology in its time.

On the national news last night Marc Lalonde told us that we were getting a technological wonder in our area, a Uranium Refinery. He also stated that because we would be getting all the radio active waste from the whole nuclear industry in Ontario up here in the north we should have the refinery too. We have always wanted industry in the north regardless of what kind or how dirty because we are big and we can take it, I guess. I read recently where Japan is cleaning up its environment. They are moving all their dirty industry to South Korea.

I wonder will we ever look back some day in Northern Ontario and say, "We could have nipped some of these things in the bud but we didn't". We might also ponder the story of the traveller who made a hole so the camel could put its nose in his tent only to find that soon not only was the whole camel in there but the rest of the herd as well.

Dr. Maurice Foster has worked hard to have this refinery in this area. It is very hard for me to find out what his long term views are for this area. I wish space would permit me to insert parts of an article I read yesterday in a magazine published this month. The title of the article is "Elliot Lake Still dying for a living." I asked Foster at candidate night in West Bay, about his long range plans if elected, for the 100 million tons of radioactive mill tailings at Elliot Lake and I got no answer. I also have a lot of questions about the uranium refinery for this area. Will this refinery prepare yellowcake into U.F.6? Will all this material be for export? Can we use any of it in Ontario? Eldorado told a Sudbury Citizen's Committee on November 3/78 that they were unaware of any U.F.6 plants that have been decommissioned. In 15 to 30 years this will have to be done. How will it be done.

Do you believe there is a safe level to exposure to radiation?

Dr. Porter of the Cinnusub if Energy Iterim Report, page 206, "That much more work is needed on the risk implications of exposure to radiation."

What is Low Level Raffinate?

Will this refinery produce this material?

If it does, will it be necessary to store up to 10 years or more Raffinate waste on the site in drums?

What would be the risk to the area?

Could there be a catastrophic accident?

If there was, what about liability protection?

When the Sudbury Citizen's Committee asked this question an Eldorado spokesman quoted 35 million as the amount of public liability insurance.

What do they think our area is worth?

Are we so dedicated to making jobs that we will create them even if we have to get skilled people from West Germany, U.S.A. or Japan to fill them?

There is no safe method for permanently storing radioactive waste and there may never be, even if our government feels it's a foregone conclusion.

How much waste could build up at a refinery site in 30 years?

If the radioactive waste is moved, will it be by transport on Highway 17?

What about an accident on the road, say with a school bus?

What about the problem of a possible synergistic effect of emmission from such a refinery when combined with sulphur dioxide emmission and other pollutants on the vegetation and the North Channel?

If we combine radiation with Mercury and Sulphur and other pollutants we may make this area an unexceptable place to live. If we add to this a possible accident, where will we go? If we are contaminated with radiation who will take us in? Could we go to Toronto or Ottawa or would we be like lepers and have to stay on the outside of the city walls? If we had to leave this area could we get a relocation grant to move say to New Zealand? Would they take us in?

Quirke Lake is 900 feet deep and once had the best Pickerel fishing in the area and now it has no aquatic life. There are at least 20 dead lakes in the Elliot Lake basin plus a large portion of the Serpent River. Will there be more? How many more? Will the North Cannel be next? Will the smelts in Kagawong be good to eat in five years? In 10 years?

Is building this refinery good stewardship of funds? Wouldn't we be better off in Canada to put this money in one of the two hundred small primary or secondary industries? Why is it going to cost 16 million more to build here than in Port Hope?

"Dr. Foster, if I asked you about my sick horse you may tell me to shoot it and I could accept that, but what if the world market for U.F.6 or whatever it is, dries up in 15 years and no safe storage for the waste is found and by that time we haven't learned to decommission the plant. What then?

We need a lot of answers to a lot of questions before the bulldozer's move in.

Ed Burt Talk Sunday, March 29, 1981 West Bay

- ALGOMA MANITOULIN NUCLEAR AWARENESS IS CONCERNED ABOUT HOW WE CITIZENS CAN BECOME PART OF THE DECISION MAKING PROCESS AS TO WHETHER OR NOT THE URANIUM REFINERY ELDORADO NUCLEAR LTD. IS PROPOSING FOR BLIND RIVER WILL BE BE BUILT.

- WE ARE TOLD BY THE GOVERNMENT AND THE ATOMIC ENERGY CONTROL BOARD (A.E.C.B.) THAT ENVIRONMENTAL ASSESSMENT HEARINGS WERE HELD.

- WHY THEN, HAVE THE FOLLOWING GROUPS APPLIED TO THE A.E.C.B. TO PRESENT BRIEFS OUTLINING CONCERNS ABOUT THIS REFINERY BEING BUILT BEEN DENIED OPPORTUNITY?
  1) ALGOMA-MANITOULIN FEDERATION OF AGRICULTURE
  2) MANITOULIN ISLAND TOURIST ASSOCIATION
  3) MANITOULIN ISLAND CREAM PRODUCERS
  4) UNION OF ONTARIO INDIANS (representing the 18 bands of the Robinson Huron Treaty Assn., and the 6 bands of the United Chiefs and Councils of Manitoulin)
  5) MANITOULIN ISLAND UNITED CHURCHES
  6) ALGOMA-MANITOULIN NUCLEAR AWARENESS
  7) BLIND RIVER AND DISTRICT CONCERNED CITIZENS
  8) ALGOMA-MANITOULIN NATIVE WOMEN
  9) NORTH CHANNEL COMMERCIAL FISHERMEN

- PERHAPS THE ANSWER LIES IN THE FACT THAT THESE PEOPLE WERE NOT MADE AWARE OF THE ENVIRONMENTAL ASSESSMENT HEARINGS AND THE FACT THAT THIS ISSUE WAS INTRODUCED AFTER THE LAST FEDERAL ELECTION?

- PERHAPS THE ANSWER LIES IN A "CONSULTATIVE DOCUMENT RELEASED BY A.E.C.B. ON JANUARY 9, 1981 INDICATING THAT IT WILL TAKE AT LEAST 10 YEARS BEFORE THEY WILL EVEN BE ABLE TO ADDRESS THE LONG TERM (PERMANENT) DISPOSAL OF URANIUM TAILINGS AND RAFFINATE?

- AS FAR AS ALGOMA MANITOULIN NUCLEAR AWARENESS (A.M.N.A.) GOES, WE HAVE DISTRIBUTED 1800 MEMBERSHIPS AND SOLD ABOUT 1000 TO DATE, BUT NOT ALL THE MONEY HAS BEEN COLLECTED FROM ALL THE PEOPLE SELLING MEMBERSHIPS.

- WE HAVE MEMBER SHIPS FOR SALE IN THE FOYER TODAY.

- NEXT SATURDAY THERE WILL BE A "BLITZ" TO SELL MEMBERSHIPS IN MINDEMOYA, LITTLE CURRENT, AND SHEGUIANDAH.

- WE ARE USING THE FUNDS RAISED BY MEMBERSHIP SALES AND TODAY'S CONCERT TO COVER ADVERTISING, SPEAKERS' TRANSPORTATION, AND FOOD COSTS.

... 2

- WE ISSUE RECEIPTS FOR ALL MEMBERSHIPS SOLD, HAVE OPENED AN ACCOUNT AT THE BANK OF MONTREAL IN LITTLE CURRENT, AND HAVE A BOOKKEEPER.
- WE WILL BE PRINTING FINANCIAL STATEMENTS IN THE LOCAL PAPERS ONCE THE MEMBERSHIP DRIVE IS FINISHED.
- INCIDENTALLY, THIS BENEFIT/INFORMATION DAY IS COSTING $600.00 .
- IN LIGHT OF THIS HIGH COST, WE ARE DISAPPOINTED THAT OUR M.P., MAURICE FOSTER; THE PRESEIDENT OF A.E.C.B., JON JENNEKENS; AND THE VICE PRESEIDENT OF ELDORADO NUCLEAR LTD., RONALD DAKERS ALL FOUND EXCUSES TO REFUSE OUR INVITATION TO SPEAK TO US, THE CITIZENS OF ALGOMA-MANITOULIN.
- NEXT SUNDAY, APRIL 5th, AT ST. ANDREW'S PLACE IN SUDBURY, THE UNITED CHURCH WILL BE HOSTING A COMMUNITY INFORMATION DAY ON NUCLEAR RESPONSIBILITY.
- I WOULD LIKE TO READ THIS BRIEF FROM THE ALGOMA-MANITOULIN NATIVE WOMEN; AS MRS. ESTER JACKO IS UNABLE TO PRESENT IT HERE TODAY DUE TO A DEATH IN HER FAMILY.
- READ BRIEF.
- INTRODUCE MANITOULIN FIDDLERS
- THANK YOU.

WRAP - UP AT END

- IF YOU WANT TO DO ANYTHING, WRITE LETTERS TO THE GOVERNMENT PEOPLE AND PERSONAL LETTERS TO THE A.E.C.B., AS ITS PRESIDENT, JON JENNEKENS, HAS STATED THAT A.E.C.B. WILL IGNORE FORM LETTERS.
- ETC. ETC. ITS UP TO YOU, ED.
- CLOSING PRAYER

IPPANI BRIEFS

NUMBER: 1-35

NAME: EDWARD BURT.

ORGANIZATION: MANITOUWIN ALGOMA NUCLEAR AWARENESS

ADDRESS: R.R#1
GORE BAY, ONT
P0P 1H0

PHONE: 1-705-282-2485

	Week 1	Week 2	Week 3
FOR ORAL PRESENTATION	✓		
FOR WRITTEN PRESENTATION			

See #14.
WISHES TO PRESENT W/ #14

The following is a one paragraph summary of the information presented in my brief. #35

As a concerned individual and member of Algoma Manitoulin Nuclear Awareness, I would like to outline for the Interfaith Panel the many problems our area faces with regards to the nuclear industry. In our riding alone we have one of Canada's oldest and largest uranium mining and milling operations at Elliot Lake. There are currently over 100 million tonnes of radioactive tailings, a waste product from these operations, lying exposed to the environment in the Elliot Lake area. Despite much criticism and protest, Eldorado Nuclear Ltd. recently completed construction of the world's fifth uranium refinery at Blind River. We have serious questions regarding the integrity of Eldorado's operation in light of their past record for accidental spills and emmissions at their similar Port Hope refinery. We are also concerned about the fact that virtually all of the uranium refined at Blind River is destined for export out of the country which we feel cannot help but contribute to the proliferation of nuclear weapons. And finally we have recently been invaded by teams of AECL scientists and geologists bent on securing a quick fix for the problem of high level nuclear waste disposal. We have serious questions regarding their chosen method of deep geological burial of these wastes and the people of Massey and area have repeatedly registered their dissapproval of AECL's experiments in their area.

Re: My personal resume

Ever since the first atomic bomb devestated Hiroshima I have been keenly aware of nuclear issues and have followed the development of nuclear power from its' early days. I claim no scientific expertise. I am a concerned individual who has read extensively and attended many symposiums, information meetings and conferences on the topic of nuclear power and the problems of the industry with regards to the health of the population and the environment.

I am a co-founder of Algoma Manitoulin Nuclear Awareness, a public awareness group founded several years ago to protest the building of a uranium refinery in our riding and to disseminate information on the many other nuclear related issues that burden our area.

I have also served two terms as the National Steering Committee representative of the Environmental Non-Governmental Organization (ENGO) for Ontario and continue to be involved as a member of this organization which has been newly named The Canadian Environmental Network.

BRIEF TO:
INTERFAITH PROGRAM FOR PUBLIC AWARENESS OF NUCLEAR ISSUES

1-35

FROM:
ED BURT, FOR ALGOMA MANITOULIN NUCLEAR AWARENESS

Algoma Manitoulin Nuclear Awareness (AMNA) was organized in 1980 in answer to the growing awareness of nuclear related issues affecting the federal riding of Algoma-Manitoulin. Although it began as an organization of protest over the proposed building of a uranium refinery in Blind River, most of the 2,000 members represented at the time were against all forms of nuclear proliferation in the area, including the mining and milling of uranium at Elliot Lake which have produced over 100 million tons of radioactive tailings to date, and the disposal of high level waste in the rock formations of the area.

Since its' inception, our organization has contributed numerous comments and critiques on information documents produced by the Atomic Energy Control Board with regards to issues affecting our area. Enclosed as part of this brief are two such comment papers which we feel will give the Interfaith panel an idea of some of the concerns to which we direct our efforts. Although we have participated in the AECB public consultation program on these issues, we have found it to be a very one-sided participation and have never received any response from the Control Board to our comments. We continue to reiterate our lack of faith in the AECB as an effective agency to be accountable for the public health and environment vis a vis the nuclear industry.

We are also enclosing as part of this brief, a written outline of a film which our organization produced to document the multi-faceted problems faced by our area. We feel that this outline, entitled "Nuclear Sacrifice: A Northern Legacy", clearly explains our concerns.

And finally, we enclose a copy of a position paper prepared by members of our organization and presented at an Enivironmental Non-Governmental Organization (ENGO) meeting on the subject of creating a single nuclear waste agency in Canada. The disposal of both high and low level nuclear waste has become a major concern of our organization and we have serious doubts about the current plans and proposals of Atomic Energy of Canada Ltd., the body now responsible for the disposal of such wastes. The enclosed position paper clarifies some of our thoughts on this matter.

We feel that our area of Northern Ontario is burdened by a host of nuclear related problems and we look forward to the opportunity to dialogue with members of the Interfaith Panel during the first week of hearings when Canada's Domestic Nuclear Issues will be discussed.

Sincerely,

Edward Burt
Algoma Manitoulin Nuclear Awareness

1-35

The following is a copy of the oral presentation I would like to make to the Interfaith Panel summarizing material contained in our written brief.

Mpago this is the oral presentation I made to the panel at the hearings in Toronto Ed.

As a concerned citizen in 1984, after watching and studying the nuclear industry for over thirty-five years, I would like to make the following comments.

ELLIOT LAKE MINING AND MILLING OF URANIUM

The mining has expanded in recent years but the cost of nuclear electricity is very expensive and the cost will continue to increase. The price of uranium has dropped. Ontario Hydro has a very heavy debt load. There are many other uraium ore bodies outside of Ontario which contain a higher percentage of uranium.

In light of the above realities, a few things may happen. The millions of tons of radioactive tailings in the open environment around Elliot Lake have impermeable tailings dams holding them back with a guaranteed life of only about 25 years. Reports cast scarcely a glance at the long term management of the wastes.

1. When the contracts in Elliot Lake come up in the nineties the bargaining will be so tight that no funds will be found for long term management of the wastes.

2. The tailings will continue to be left in the open environment and the Radium, Thorium and other radionucleides will continue to find their way up the food chain to plants, animals and people.

3. The nuclear industry will play down the importance of doing anything with the tailings and they will remain the largest clear cut health hazard from the nuclear fuel cycle at the present time and the cancer epidemic that may already be upon us, will increase.

THE REFINERY AT BLIND RIVER

We were only using about 15% of our uranium production before the refinery was build so virtually all of the production from the Blind River plant was intended for export. This makes us dependent on countries like India, Pakistan, Argentina, Turkey, South Korea, Romania, Russia United States, France and middle east countries to buy our product. It also pushes nuclear technology to all corners of the world.

The environmental problems are also of great concern. The refinery in its' lifetime will emit several tonnes of uranium dust into the atmosphere that will travel for miles and like the tailings, will be radioactive for thousands of years.

When we look at the number of spills of radioactive and related toxic wastes that have occured at Eldorado's refinery in Port Hope over the years, and the accidents that have already occured at Blind River, we wonder what the future holds.

GENERATING STATIONS AND HIGH LEVEL WASTE

We haven't any generating stations in our area although at one time Ontario Hydro's projected growth indicated that in the future we would need several new nuclear power plants every year and some of them were going to be built in our area.

High Level → 40,000 Tonnes by Year 2000.

The high level waste created by nuclear power plants does concern us becasue currently Atomic Energy of Canada Ltd. is conducting experimental drilling into the rock formations of our area, north of Massey on the trans Canada highway. We still have many questions about AECL's chosen method of deep geological burial of high level waste and fear that these questions may never be answered.

300 Million Tons of Tailings

The way we store the high level waste from the environment in the future will be largely an experiment because we won't know for thousands of years if it worked.

A lot of the minor problems even seem mind boggling to me. I wonder, for instance, what kind of marker should be placed at the disposal site that will contain the proper language that will be understood by people living a hundred thousand years from today.

Once can only conclude by stating the following regarding our area if no changes are made:

The cost of funding for long term storage of tailings will be difficult if not impossible to secure.
The leaching will continue. The radon gas will continue to escape into the atmosphere. Lake Huron will continue to receive an overburden of radionucleides.
The band-aid nature of present waste management practices will continue into the foreseeable future.
The tonnes of uranium dust which can't be contained by the baghouse filters at Blind River's refinery will continue to be emmitted into the atmosphere.
The waste from the refinery will be added to the growing mountains of tailings at Elliot Lake.
The cummulative build up of radioactive waste will increase the exposure of radionucleides to the populations, thereby increasing the danger of cancer and other illnesses.
The industry will continue to operate enshrouded in secrecy downplaying the dangers involved in their operations.
The sale of uranium will increase tension in the world by providing the raw material for nuclear weapons.
The industry will have to be bailed out and provided with grants and subsidies in order to survive.

Every time I think of the nuclear industry, I think of a verse from Proverbs 13:19

> It is pleasant to see plans develop.
> That is why fools refuse to give them
> up, even when they are wrong.

COMMENT PAPERS

ON

A PUBLIC INFORMATION DOCUMENT
RELATING TO PHASE I OF THE QUIRKE LAKE TAILINGS
UNDERWATER DISPOSAL STUDY

FROM

EDWARD BURT
AND
MIKELL BILLOKI

FOR

ALGOMA MANITOULIN NUCLEAR AWARENESS

A 1976 Status Report - Water Pollution in the Serpent River Basin, Ontario Ministry of the Environment, says it another way. It describes the extensive contamination of the Serpent River System, including some 18 lakes as a result of radioactive and non-radioactive contaminants from the uranium tailings. Throughout the river system downstream from Elliot Lake, the water is contaminated with radium to such an extent that it is unfit for human use and all fish life has been killed off.

From a Royal Commission document: A Race Against Time, it is stated that "Uranium mill tailings will constitute an increasing health and environmental problem". And, from the Final Report, The Expansion of the Uranium Mines in the Elliot Lake Area, Ontario Environmental Assessment Board, Toronto, May 1979:
- The board finds that the long-term impermeability of tailings basins. specifically dams containing the tailings cannot be guaranteed.
- The board finds that the Ministries of Natural Resources and Labour have no definitive criteria for evaluating the construction, materials used, and the stability of tailings dams.
- The board finds that the mill tailings have the greatest potential impact on the natural environment of all the activities related to the mines expansion.
- The board finds that the potential for redissolution of radium from precipitation ponds after abandonment is of great concern.

I have read documents on Close-out Criteria for Uranium Tailings, but if anyone wants to see how it is really done, they should rent a light aircraft and fly over the abandoned Pronto Mine that is just down the road from here.

I see how the deer like to eat trefoil on my farm. A lot of the vegetation on the tailings is trefoil and how much of it do they eat? I have seen deer tracks at Milligan, Pronto and Stanrock tailings and I wonder how high the level of radioactivity is in their blood.

If I had read in this study where some ministry had suggested a large water diversion project to channel the Serpent River into another watershed and turn the Elliot Lake basin into a dry basin, or if someone had suggested a restoration plan be put in place to generate a large sum of money to try and solve the tailings dilemna, or if a format had been presented to form a single nuclear waste agency to deal with the problem of tailings, or if the health concerns had been presented and if the the ministry of health had made a statement in the study - I might have been optomistic.

I wonder if it would have been a different study if all the people involved had been moved to the east side of the Stanrock tailings for the month of August last year to compile the study. The could have tented with their families and while the study was being written the children could have picked blueberries. I saw children picking blueberries there last August. The only problem is that when the wind blows the tailings blow in the wind. You can feel the grit on your lips and it gets in your eyes.

...4

Millfoil concentrated uranium at 14,000 times, radium in waterlilies 11,000 times and sedge 13,000 times the lead 210. Finnish scientists from the University of Helsinki found that people consuming reindeer that ate contaminated lichen would end up with 8 times the normal level of radioactivity in their blood.

The Ontario Ministry of the Environment on page 26 of the study, says that it is the Ministry's mandate to protect the natural environment. I would like to know if moose are safe to eat that grow up in the Elliot Lake basin and all the way downstream to Lake Huron.

Dr. Jean Pidgeon, a Blind River doctor and president of the Liberal Association, made the following statements in the Sudbury Star in November of 1966. Pidgeon called "for urgent and extensive studies into present methods of control of radioactive mine wastes (tailings). This is a different problem than any other and we must look ahead, for one thing is known and that is once contaminated, water will stay that way for many thousands of years. I am concerned about the big lakes, particularly Lake Huron, for contamination cannot be held back for any great period of time. It will trickle down and will certainly reach Lake Huron. After a few decades I predict there will be excessive amounts of radiation in this lake and it will stay there." He estimated that the amount of radium thus far released was close to 50 pounds, as much, he said, as has been refined throughout the entire world.

One of the disadvantages of disposal of tailings in Quirke Lake, as stated on page 27 of this study, is increased load of radium 226 to the Serpent Harbour.

I have spent a lot of time in the North Cannel fishing and camping with my family. The study that Eldorado concluded in Saskatchewan on water plants also included several species of fish. Radioactivity accumulated up to 11,000 times in the bone and 6,500 times in the flesh greater than the water they swim in and Northern Pike had the greatest levels of radium. Your study mentions Serpent Harbour, but what about the rest of the North Channel? What is the situation 18 years after Dr. Pidgeon's statements? Are the Northern Pike safe to eat in the North Channel?

It's hard to find answers that make me feel very good. On page 22 I find the following comment: "From a fisheries perspective, neither of the two tailings disposal options under consideration offer any benefits to the resource.

Radioactivity can travel through a complexity of biological pathways and build up to high concentrations. Radioactivity in the environment eventually finds its way up to the food chain to animals and people. This area of study is almost completely unexplored in the Canandian context.

On page 25 of your study, it says: "The study concluded that some of the long term impacts of conventional on-land tailings management schemes might be more signifigant than previously anticipated".

...3

Gore Bay, Ontario
April 11, 1983

Environment Canada
25 St. Clair Avenue East
7th Floor
Toronto, Ontario

Re: Comment on: A Public Information Document Relating to Phase I of the Quirke Lake Tailings Underwater Disposal Study

I received the study last week and after reading it over, I realized that I had just a few days to make some comments. With a very busy schedule at this time of year, it seemed almost impossible. The first time I read the study I underlined about half of it for comment and the second time I read it I underlined the other half. Then two lines in the accompanying letter caught my eye - "the purpose of this meeting is to receive input as to public acceptability of underwater and surface tailings disposal options for future uranium mining activities in the Elliot Lake area".

I then decided my comments should, maybe, be not so much as to what the study says but to try and address some of the things it doesn't say.

But, first I am pleased that the paragraph on page three 1.4 Present and Future Tailings Accumulation, was included. This will be valuable information for our politicians. Some have been in office for several terms and according to a response to a letter in a local paper this past winter, they don't know what the volume of tailings is in this area.

When I read the reports of Environment Canada, Fisheries and Oceans, and Ontario Ministry of the Environment it seemed at first glance, to be a subject that could be contained on a few pages of a study. But as one thinks about the multitude of unknowns, it suddenly becomes a subject so gigantic and awesome that it almost overwhelms you.

I have never read where any board, agency or department has ever overestimated the environmental or health affects of radioactive wastes. In every case they have been underestimated.

It is the multitude of unknowns that worry the public. When Mabel MacAskill, principal of Rockhaven School in Serpent River, was told in 1977 that the water they were using was fine by the health inspector, and later found out that it had double the radioactive contaminants set by the province, it makes me wonder about genetic defects that may have been caused by drinking that water. When Len Prior, from Whiskey Lake, was told by the Department of Lands and Forests in 1956 that industries have co-operated excellently and the water in the lake would retain its quality, I wonder about the animals that drink water in that area now. I have hunted moose in Northern Ontario for a long time. Some of the main food for moose is waterlily, millfoils and sedges. A study on the accumulation of radioisotopes in plants, conducted by Eldorado Nuclear at Dubyna Mine in Northern Saskatchewan, showed levels of radioactivity in plants were thousands of times greater than the levels in surrounding water.

...2

If one of the ministries in the study had suggested that detailed maps of the tailings areas be made available to the public this summer and signs and fences be put up to warn people of the health hazards involved by coming in contact with tailings, it would have had more credibility. But then, they will be radioactive for thousands of years, so why get in a hurry.

I think the tailings, whether in a lake or on the surface, is a huge festering sore on the land of Northern Ontario and as long as we keep mining uranium it will get bigger and bigger. It is a crime against the Earth.

I am reminded at this time of some words by a noted German theologian, Jurgen Moltman, in an interview earlier this year. He said, "I would like to name a signifigant problem for which neither capitalism or socialism has of yet been able to find a satisfactory solution, the ecological crisis. Whether nature is destroyed through capitalisti or socialistic industry, the result is the same".

There is not enough vision or commitment or guts in this study to solve the problem.

We need a new philosophy. Dr. James Houston, Chancellor of Regent College in Vancouver, could start us off with these words, "Man has no absolute possession of anything. He occupies only a place in the household of creation. Man has only the right of use. The duty to heal between people and between man and the earth, but not of absolute possession. This is true ecology".

Thank you,

Edward Burt
RR # 1
Gore Bay, Ontario

Edward Burt

Algoma Manitoulin Nuclear Awareness has been keenly aware of the enormous problems involved in uranium tailings disposal and interested in the study and implementation of disposal plans. After reading "A Public Information Document Relating to Phase I of the Quirke Lake Tailings Underwater Disposal Study", we would like to make the following comments.

Table 3: "Comparison of On-Land and Underwater Disposal Methods" as well as the comments of the agencies and working group involved in the study, makes it abundantly clear to us that neither method of tailings disposal is an acceptable option. It would seem that the mining companies and government agencies are still requiring that the public choose from the lesser of two evils and this is the bottom line.

We find this situation increasingly intolerable, especially given the fact that the devastation which now exists in the Elliot Lake area might be expected to increase five fold according to this document. Are we to understand that ultimately, if nothing better than the current unacceptable practice of dumping these low level radioactive wastes on the land around Elliot Lake is found, that we will simply allow the mining companies to continue producing them, while keeping our fingers crossed that a miracle of technology may occur?

We are also distressed by the fact that given the involvement of so many government agencies in this study, neither the federal nor provincial ministries of health appear to have been consulted. Indeed, human health has been treated as a non issue and its consideration is all but non existent in this and most tailings related studies.

One of the only times this concern is addressed in the document is in the perfunctory statement made by the Department of Indian and Northern Affairs in which they say "possible health related problems which may occur downstream from the disposal site are of utmost concern to the Department. Since the Serpent River Indian Band may expect to bear the initial pollution related problems, their concern is well justified, yet even the comment by the government department responsible for their welfare is brief and amounts to a mere "keep us informed".

We would also like to register our contempt for the position indicated by the Atomic Energy Control Board. While revealing that "an AECB study undertaken by Beak Consultants Ltd...concluded that some of the long term impacts of conventional on-land tailings management schemes might be more signifigant than previously anticipated", they conclude in their habitually gutless way by saying that they will support further research on Quirke Lake only if there is widespread agreement among agencies on "socio-political aspects".

The AECB continues to lack initiative and imagination. They appear to have misplaced priorities and a clear understanding of their mandate which, in our opinion, would put environmental and health concerns above "socio-political aspects". It is distressing that the AECB fails to take any initiative in this matter.

...2

To summarize our position, it is our perception that all the parties involved have been nitpicking regarding the pros and cons of one disposal option over another, using such unreassuring terms as "technica feasible", "lower probability", "marginal deterioration", and "less adverse", while overlooking or perhaps avoiding the larger issue which is the possibility that we may never find a suitable method for disposing of what may amount to 500 million tons of radioactive pollutio

And so the mining companies support the status quo, mainly on the basis of economics; the environmental ministries support further study because they realize that the status quo is not quite acceptable; the Ministry of Natural Resources and Fisheries and Oceans aren't sure what to support but indicate their deep concern for the fish of the area and hardly anyone appears to regisiter any support for the health of the people who live in the watershed of the tailings, which ultimatel includes the north channel of Lake Huron.

We realize that we risk alienating many people who are genuinely bent on securing a cure for this enormous problem, but our position must be that an ounce of prevention will always be worth a pound of cure and the ultimate preventative measure in this case would be a long overdue moritorium on tailings production until the solutions are clear. We must concentrate our resources and expertise on cleaning up the pollutio that already exists and finding ways to decrease and finally stop the production of these tailings which threaten our health and our environment.

The unknowns are too great. The risks are too great and we are tired of thinking of ourselves and our natural resources as guinea pigs and waiting for the future to make clear our fate.

You are all aware of the menace these tailings pose and the destruction that has already been their legacy. You must also, by now, be acutely aware of the frustration that has come from years of studying the problem only to find that we are still a long way from solutions. Where among you exists the courage to say "ENOUGH IS ENOUGH"?

-30-

Mrs. Mikell Billoki

for

Algoma Manitoulin Nuclear Awareness

COMMENT ON:

AECB CONSULTATIVE DOCUMENT C-7

Deep Geological Disposal Of High Level Radioactive Waste In Crystalline (Plutonic) Rock:- Initial Regulatory Statement Regarding Concept Assessment Stage

BY:

Members of ALGOMA ACTION FOR NUCLEAR AWARENESS (AANA)

March, 1982

THE FOLLOWING ARE COMMENTS that members of ALGOMA MANITOULIN NUCLEAR AWARENESS would like to submit to the Atomic Energy Control Board regarding their document: C-71: DEEP GEOLOGICAL DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTE IN CRYSTALLINE (PLUTONIC) ROCK: INITIAL REGULATORY STATEMENT REGARDING CONCEPT ASSESSMENT STAGE, which was issued for comment on March 10, 1982.

To begin - we find it most difficut to properly asssess the document because of contradictory and confusing statements regarding the exact nature of the disposal concept.

In (1) Introduction, under the subtitle (A) The Disposal Concept, it is stated: "Whether this spent fuel is discarded in its present form or reprocessed to recover useful constituents..." and then in (4) Required Scope of Concept Assessment Document, one of the components for design is listed as (f) Immobilization and Packaging of Spent Fuel and/or Reprocessing Waste.

However, in (11) Retrievability, the document states: "Disposal implies that the waste is discarded without the intention of retrieving it". A concession is made for waste removal as a contigency measure during the operational period, but not for "reprocessing" the spent fuel. This statement is reinforced in the Information Bulletin 82-1, page 3, which states: "Disposal means that the waste is discarded without the intention of retrieving it". (our emphasis) Again, methods for retrieving waste are considered only as a "precaution" with no mention of reprocessing.

This blatant contradiction of information only serves to confuse the readers and leaves us still in the dark regarding AECL's ultimate plans for reprocessing spent fuel at the site of any waste repository. Why are we not able to get a definitive statement from AECL or the AECB on this important issue? Are we to assume that you are leaving the options open without having to account to the public for this decision? How can a disposal concept be assessed if it is not clear that the concept is actually related to disposal?

A second criticism of the document is its lack of relevent information as a base for concept assessment. Specifically - what are we planning to bury and how much? We feel that identifying the waste to be disposed of in this way is very important before the public is able to adequately assess any other technical, political or social issues.

In (6) Characterization of the Waste, the AECB expects to receive information of the physical and chemical nature of the waste inventory but no mention is made regarding quantity. It is very difficult to deal with the concept of infinite waste. Do we assume that an "information gap" of this magnitude will be "tolerated" infinitely or will the public be told the exact nature and exact quantity of waste to be buried at any one disposal site?

Again, how does the AECB expect the public to make adequate assessment of its document if, as it states, there are so many "uncertainties surrounding this undertaking"? We can only hope that as you further state, "...these uncertainties be identified and where possible quantified" and that this will be done with all due expediency.

Another point raised which we find contentious is the issue of Post Closure Monitoring. The document states that "the repository will not be allowed to close until sufficient thechnical evidence has been assembled to conclude with a high degree of certainty that the facility can be abandoned without the need for post closure monitoring". But it also suggests in (13) Post Closure Radiological and Environmental Considerations, that disposal presents "time frame" problems which currently have no answer.

We are made aware of some of the biological, geological and geochemical effects which pose a long term threat to the repository and phrases such as "which are likely to be typical of that to be expected" do little to alieviate concerns and less to instill faith in "a high degree of certainty".

Since it is not clear that this "high degree of certainty" will ever be achieved - are we to assume that there is a possibility that a repository could be built and never allowed to close? Or would it be better to assume that Post Closure Monitoring is a very real expectation to be calculated for and not merely a "social concern" or means of placating the public? We object to the condescending tone of the document and Information Bulletin which also suggests that post closure monitoring might in some way "interfere with the safe functioning of the disposal system".

We suggest that the AECB take steps to insure that Post Closure Monitoring be a pre-condition of construction and hope that future generations, ad infinitum, will accept this burden.

We will be very interested to learn of the AECB's progress in defining and clarifying their position with respect to those items listed at the end of (13) Post Closure Radiological and Environmental Considerations, including: a) assumptions for determinin estimates of doses, b) length of performance time necessary for repository, c) the degree of certainty required regarding repository performance, and d) the meaning of terms such as "natural background radiation", "small fraction" and "members of the public". No doubt you will find, as we have, that there are many other positions and terms that have so far defied satisfactory definition.

One last criticism of the doucment deals with Alternative Disposal Options. The AECB states that it will require AECL to present a review of alternative disposal technologies but fails to mention on what research this review will be based. We are concerned that because AECL has chosen to narrowly limit its research that it will not be considering all available options.

Even though research into alternative disposal options may be taking place in other countries - what is to guarantee that these research projects will have been completed or proceed on the same schedule as AECL's chosen research option? Will AECL be allowed to make a decision on its chosen option before final data is available on all or any other options? And how can AECL form a complete rationale of its choice of concept if all other concepts have not also been investigated?

We would also like to include the following comments which are not directly related to criticism of particular points contained in the document. These comments represent practical social and moral issues which we believe deserve serious and immediate consideration by the AECB.

We believe that there is one very important element missing from this whole process. Waste management is as much a social issue as it is a scientific one and we believe that any proceedures in waste management cannot be complete without what we call "third sector involement".

At a recent meeting we attended in Toronto, we helped to formulate a position paper calling for a single nuclear waste agency to deal with all waste products associated with the processing and use of nuclear material. The paper reccommends that such an agency be balanced with independent members of the scientific community, the medical profession, the public, environmental groups, church groups, labour unions and any others whose primary concern is for human health and environmental quality.

We, along with a long list of other groups, endorse this concept and this is what we mean by third sector public involvement.

We believe that the Interagency Review Committee (IRC), comprised of representatives from the AECB, Environment Canada and the Ontario Ministry of the Environment, along with AECL, have too narrow a mandate to deal with a problem as gigantic as all waste products associated with the processing and use of nuclear material. We believe that a tripartite concept is the only way that proper research will be conducted. It is not enough that the public be allowed to comment on this research. There must be representation and involvement at all stages.

We would like to quote from paper "The Need For a Single Nuclear Waste Agency" (which we are enclosing for your full review):

"A major weakness in the management of Canada's nuclear waste is the lack of a single identifiable agency responsible for all forms of nuclear wastes, and the large number of agencies with responsibilities for the high levelwaste research programme. This programme includes Ontario Hydro, Energy, Mines and Resources, AECL and the provincial Ministry of Energy. This diversification of responsibilities has only served to cause public confusion and mistrust in a programme demanding simplicity to prevent confusion and gain public acceptance."

"Too many questions of concern to the public can and have been ignored."

"Another identifiable weakness is the role of AECL in management of nuclear wastes.

"Under the Canada-Ontario agreement of 1978, Ontario Hydro is responsible for interim storage and transportation of high-level nuclear waste, while the mobilization and ultimate disposal are the resonsibility of AECL.

"AECL is a federal Crown Corporation that answers to the Minister of Energy, Mines and Resources. Since 1945 AECL's mandate has been to conduct research and developement into nuclear energy, and to promote and sell nuclear technology, such as the CANDU reactor, at home and abroad. This commitment to the promotion and developement of this technology, has led to a salesman-like bias in the treatment of both the technical and public relations aspects of the entire AECL programme.".

A case in point where this salesman-like approach by AECL has spilled over into their waste management programme is the two recent full page advertisements that appeared in several northern Ontario newspapers regarding the disposal of nuclear waste in crystalline (plutonic) rock.

One of the ads had at the top, in large print, the words "Yes, We Care Too" and the other "Granite Is Forever". This seems to us to be a poor stewardship of funds. We can't understand why any group would try to sell the public one theory for nuclear fuel waste management as if it were a new brand of toothpaste that the public should know about.

We don't think that AECL has any insights into the future that have been denied us. How do they know that granite is forever? Maybe shale is forever. Maybe soft rock is forever. Maybe none of the above is forever. But what we do know is that nuclear waste is almost forever.

We believe that a single nuclear waste agency should be created and that such an agency should be independent of all ministries of the federal government and should report directly to cabinet.

We believe that the best possible sites should be selected for research and without public involvement, further mistrust will develope and the best possible sites will not be used, but rather sites for research will be selected depending on where AECL meets the least public resistence.

We believe a tripartite concept should be adhered to regarding managing of research approval and operating phases of the programmes and should be required to have each of its proposals subject to full environmental assessments.

Another area where the IRC and AECL mandates are inadequate is in the area of what we will call "intergenerational ethics".

What responsibility do we have to people yet unborn? Wherever our radioactive garbage will eventually end up, it will remain hazardous for 10,000 years or more.

We would like to make our obligation to the future clear in what we refer to as the "protect posterity principle". This can be summarized in three parts:

1. We are all members of the universal human community and we are all united in time and space. The gene pool for the whole human race is present in todays world and the responsibility for the protection of that genetic bank is ours.

The best management and technology is a commitment we must make to the use and disposal of nuclear material and we do not believe the present concept is adequate.

2. We have to pass on the knowledge of the hazards. We need a complete sharing of information to our grandchildren and people not yet born. We need to leave complete and detailed information of the location and nature of our radioactive grave. A concrete stone or marble monument on the site with warnings and diagrams in sign languages and multiple languages are things that need to be done so that people born in the far distant future will understand what has been done.

3. We are deriving the benefits and the wealth produced by nuclear fission reactors. Future generations should not have to pay to protect themselves from our garbage.

Post closure monitoring may be necessary for hundreds of years. What would happen if a serious leak occured years and years from now? We believe that an endowment fund should be set up from profits. This should be a fund with compound interest that could build up over several centuries to provide financial protection for future generations

We have been discussing mainly high level waste up until now but we would also like to see a restoration fund set up from the sale of uranium for the permanent storage of mine tailings, mine equipment and the decommissioning and permanent storage of reactors, mills and refineries.

The industry is thirty-five years old and we have no restoration fund or endowment fund and our waste disposal in all areas is temporary and an experiment at best. The problems facing nuclear waste management are enormous.

A tripartite concept involving 1. AECB, 2. Environment Canada and Ontario Ministry of Environment and 3. a single nuclear waste agency, would be a far better approach to these problems than what we have at present.

We should also be facing the possibility that a safe disposal method will not be found and whether we should allow contemporary affluence to become dependent on fission power.

In summing up we would like to make it clear that we enthusiastical support the AECB's recent innovation of the public consultation policy and appreciate this forum to voice our concerns.

We do, however, feel that because of the large amount of public money budgeted to the AECB and various sectors of the nuclear industry, (noteably AECL and Ontario Hydro), for public relations, that some money should also be allocated to public environmental groups who wish to research and comment on industry decisions and policy papers. We believe our voice in these matters is as important as the voice of industry and government since we are the larger body who will have to live with the ultimate decisions.

Signed:

Edward Burt
Mikell Billoki
Lloyd Greenspoon
Chris Tilson
on behalf of Algoma Manitoulin Nuclear Awareness (AMNA)

Reply to:
Edward Burt
RR #1
Gore Bay, Ontario
POP 1HO
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NUCLEAR SACRAFICE: A NORTHERN LEGACY

3/4 inch video tape; 55 minutes
Produced by Algoma Manitoulin Nuclear Awareness

Appearances by: (in alphabetical order)

Sister Rosalie Bertell: geneticist

Ed Burt: Algoma Manitoulin Nuclear Awareness founding member

David Campbell: singer/songwriter

Paul Carlos: vice president of Rio Algom, an Elliot Lake mining company

Bob Gallagher: Mayor of Blind River, Ontario

Linda Leighton: environmentalist, resident of Port Hope, Ontario

Dr. E. Newbery: University Professor and member of Project Ploughshar an international disarmament organization

George Purvis: commercial fisherman

Homer Seguin: United Steel Workers of America representative in Elliot Lake

Dr. Frank Sommers: member of Physicians for Social Responsibility

Dr. Ernest Sternglass: physics professor and expert on the health effects of low level radiation

For more information contact:

Chris Tilson
RR # 1
Little Current, Ontario
POP 1KO
(705) 368-2193

NUCLEAR SACRAFICE: A NORTHERN LEGACY

Northern Ontario is great expanses of wilderness forest, bountiful lakes and rivers, rocky outcroppings, patches of tamed farmland and is dotted with villages, towns and thriving cities. The allure of clean air, wide open spaces and chrystal blue waters attracts many people from the densly populated areas of the south in all seasons.

But Northern Ontario is also a facade. Along the north shore and in the waters of Lake Huron is the federal constituency of Algoma-Manitoulin. Within the boundaries of this 13,200 square mile area there is a pollution which has already deadened parts of the environment and which threatens to grow and jeopardize the future of its land, water, wildlife and people.

The polluter is the nuclear industry. From the mining of its raw fuel uranium to the permanent disposal of its deadly spent fuel containing Plutonium, the nuclear industry is making its presence felt in every corner of this riding.

Some have come to believe that Algoma-Manitoulin is a designated nuclear sacraflce area. It is because of this belief and a deep concern for the future that the film "Nuclear Sacrafice: A Northern Legacy" was made.

THE MINES

It begins deep within the uranium mines of the Elliot Lake area. The high risk of lung cancer in uranium miners has long been documented but compensation for the victims of this work related affliction is slow in coming and is a major concern of United Steel Workers of America local representative Homer Seguin. Seguin discusses the many aspects of uranium mining safety and reveals his displeasure with both mining companies and government in their handling of the existent dangers.

Above ground the problem of mine waste - tailings - comes to light. The mismanagement of these mountains of radioactive sands has been responsible for the demise of the Serpent River system which branches out in all directions from Elliot Lake to its emptying into Lake Huron. The system became the sewer for these tailings which spilled into its waters and contaminated this vital source of drinking water for the native and white communities along its course.

And still the controversy rages. Rio Algom vice-president, Paul Carlos, minimizes the tailings problem in an interview and maintains that the levels of radiation are so low that they are insignifigant. But the hazards of low-level radiation are given much attention and concern by others including Dr. Ernest Sternglass, a noted expert on the subject; Homer Seguin, who represents many hundreds of people who live with the tailings at their back door, and Ed Burt, a Manitoulin Island farmer and founding member of Algoma-Manitoulin Nuclear Awareness (AMNA), who expresses the sentiments of people throughout the area who are wondering what effect radon gas from these wastepiles is having on their health even many miles downwind.

The visual impact of abandoned mines with broken and untended fencing and mile upon mile of sprawling tailing sands spilling into waterways is overwhelming from air and land. The dust blows in all directions as the winds change. A tour of the waste area, which companies and government maintain are being managed, is eyeopening.

THE REFINERY

In 1978, Environmental Assessment hearings were held in Blind River (40 miles southwest of Elliot Lake) into the possibility of locating a uranium refinery in this area. The hearings were barely advertised and poorly attended. Blind River was only one of three sites being considered and few expected it to be chosen.

With the federal Conservatives in power, Hope Township (just outside of Port Hope, Ontario) was chosen for the siting of the refinery. Only months later the Liberals were back in power, the decision ammended and Algoma-Manitoulin, political seat of long time liberal, Maurice Foster, was promised a refinery. Another refinery will be built in Port Hope.

The rules have changed since the original hearings - exact locations, production and other aspects of the refinery plan have been revised but pressure from environmental groups has failed to get a new hearing.

AMNA has sponsored demonstrations, information days and panel discussions to air the many concerns over the locating of another potential nuclear polluter in the area. Sister Rosalie Bertell, world reknown geneticist, provides a sobering view of the health effects of low level radiation and Linda Leighton, environmentalist and Port Hope resident, gives an inside story of life in a refinery town and the arrogance of its major employer, Eldorado Nuclear Ltd.

The people of the area are allerted to the possible hazards from uranium dust emissions and the threat of accidental contamination of their waterways - noteably the Mississaugi River and ultimately the north channel of Lake Huron upon whose shores the refinery will be built. But the mayor of Blind River has opened his arms to Eldorado Nuclear Ltd. and has gratefully accepted generous grants from the company in lieu of taxes. Blind River can now build a new recreation facility for its citizens.

THE WASTE DISPOSAL DILEMNA

As the film is being put together, Atomic Energy of Canada Ltd. (AECL) has just recently announced plans to conduct research into a permanent disposal site for high level nuclear reactor waste at East Bull Lake just north of Massey (about 45 miles east of Blind River). Although the citizens of Massey have been told this is only a research program and that no decision as to permanent siting will be made for at least 10 years - there are no guarantees that East Bull Lake will not be chosen for this dubious distinction.

The test drilling is to take place in the area of the Sable River System from which the town of Massey takes its drinking water. Over 80 percent of the population of this community have since stated their objection to the research in a municipally sponsored vote and several other communities in the area have rallied to support them. The federal and provincial members of parliament have refused to represent the interests of this clear majority and have instead given the AECL project their blessings.

THE FUTURE

A quick glance at a map of Algoma-Manitoulin reveals the pervasiveness of the industry and its impact upon the area. And to continue the spread of nuclear technology throughout the area - Ontario Hydro has purchased a large parcel of land on the north shore near Dean Lake which many fear is to be used as the future site of a nuclear reactor.

In summing up the legacy - the ultimate nuclear weapons connection is made, for without a thriving nuclear power industry the production of nuclear weapons becomes more difficult. According to many concerned groups and individuals the production of nuclear power is only the tip of the iceberg in the nuclear debate. The real threat is global annhilation from nuclear war.

And the people of Algoma-Manitoulin are sitting on the tip of that iceberg. The extraction of a natural resource - uranium - is the first step in the deadly cycle. The nuclear industry is rooted here and the seed has been planted for the legacy to follow.

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Identifying the Problem

As can be seen in the enclosed chart, nuclear waste is created at every stage in the nuclear fuel chain, from the mining, milling and refining of uranium to the use of uranium fuel in CANDU reactors. In addition, the reactors themselves will become radioactive waste when their 30-year lifespans are over.

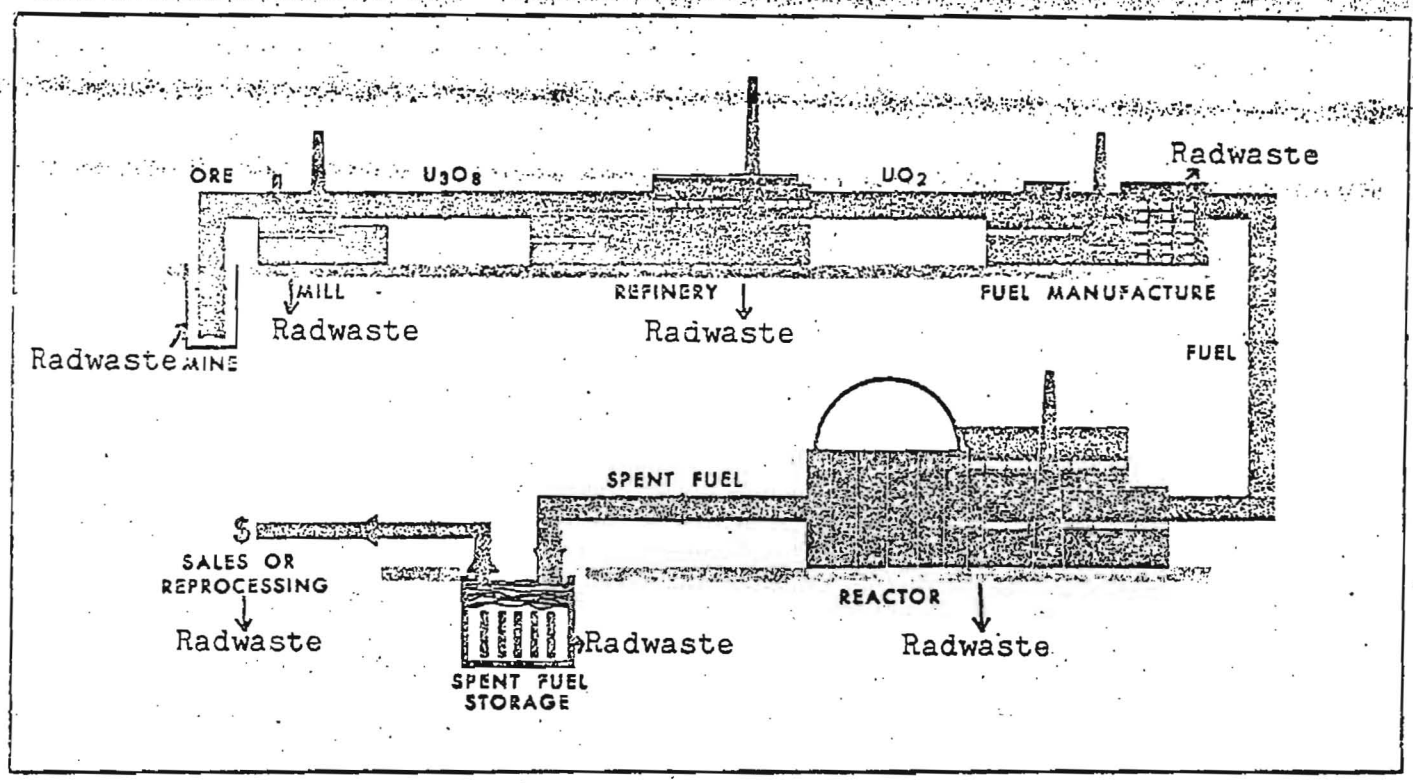
The 25 nuclear reactors operating or under construction in Canada now, will produce an estimated 39,000 tons of high level radioactive waste by the year 2000. Each Pickering-sized reactor discharges about 450 pounds of intensely radioactive fuel bundles every day. This waste fuel must ultimately find itself in a permanent disposal site.

The Select Committee on Ontario Hydro Affairs, in June 1980, identified this problem in their final report on The Management of Nuclear Fuel Waste, stating:

"The radioactive products in spent nuclear fuel pose a threat to human health for a period of time that is longer than the history of civilization. The initial threat is the most intense. After about 17,000 years unprocessed spent fuel has about the same level of toxicity as the Elliot Lake uranium ore body from which it was taken. Given the very long life of these toxic materials, no man-made containment system can ever be predicted to give sufficient protection."

While high level wastes from reactors have captured the most attention of the industry and critics, there also exist paramount problems with the disposal of low level wastes from tailings piles, refineries and other phases of the nuclear industry.

CANDU FUEL FLOW



Source: Half Life: Nuclear Power and Future Society, Ralph D.Torrie, The Ontario Coalition For Nuclear Responsibility, August, 1977.

There are currently over 90 million tons of radioactive mine and mill tailings in lakes and on the surface of the ground near Elliot Lake. Current expansion plans will result in an additional 100 million tons by the year 2000. Eighty -five percent of the original radioactivity in the ore remains in these tailings. This radioactivity is released into the environment as radon gas and radium leachate.

The refining of uranium at Port Hope, Ontario creates an additional 10,000 gallons per week of radioactive raffinate slurry, which is trucked to Elliot Lake for mill recycle and ultimate disposal

Too Many Agencies

A major weakness in the management of Canada's nuclear waste is the lack of a single identifiable agency responsible for all forms of nuclear wastes, and the large number of agencies with responsibilities for the high level waste research programme. This programme includes Ontario Hydro, Energy,Mines and Resources, Atomic Energy of Canada Ltd, and the provincial Ministry of Energy. This diversification of responsibilities has only served to cause public confusion and mistrust in a programme demanding simplicity to prevent confusion and gain public acceptance.

In reference to the nuclear fuel waste research programme the Select Committee has stated:

"The Ministry of Energy has taken the position that agreement on responsibilities is needed only for phase one, and that there is time to work out responsibility for subsequent phases.This approach is no longer adequate. Too many questions of concern to the public can and have been ignored. Some group must take responsibility now for proposing answers to key questions on site selection,

demonstration, and final operation."

Both Sweden and the United States have reached the same conclusion and have instituted single agencies to take responsibility for their nuclear waste.

A.E.C.L.- The Mismanagement of Nuclear Wastes

Another identifiable weakness is the role of Atomic Energy of Canada Ltd (AECL) in management of nuclear wastes. Under the Canada-Ontario agreement of 1978, Ontario Hydro is responsible for interim storage and transportation of high-level nuclear waste, while the mobilization and ultimate disposal are the responsibility of AECL.

AECL is a federal Crown Corporation that answers to the Minister of Energy, Mines and Resources. Since 1945 AECL's mandate has been to conduct research and development into nuclear energy, and to promote and sell nuclear technology, such as the CANDU reactor, at home and abroad. This commitment to the promotion and development of this technology has led to a salesman-like bias in the treatment of both the technical and public relations aspects of the entire AECL programme. This was also the view of the Select Committee, which stated, "...AECL compounded its credibility problem by its one-sided, overly positive and broadly pro-nuclear presentations of information".

In addition, AECL's refusal to conduct research and development into alternative disposal mediums (shale, soft rock) has drawn criticism fromthe Canadian Geoscience Council, and has caused the Select Committee to recommend that AECL investigate other disposal alternativea.

The Geoscience Council also pointed out that contrary to accepted procedures in the scientific community, AECL had not submitted the results of its research for scientific peer review.

Finally, AECL's refusal to reveal their intentions to reprocess spent fuel on the site of a storage facility has caused further mistrust by the public.

RECOMMENDATIONS

The ENGO groups recommend the implementation of recommendation 25 of the Select Committee on Ontario Hydro Affairs Final Report on Mining, Milling and Refining Of Uranium in Ontario, December, 1980, which states that:

"The Government of Ontario should urge the federal government to establish a nuclear waste management agency to deal with all waste products associated with the processing and use of nuclear material. The agency so established should be responsible for managing the research, approval and operating phases of the program and should be required to have each of its proposals subject to full environmental assessments."

Furthermore, we would also recommend that:

(1) Such an agency be balanced with independent members of the scientific community, the medical profession, the public, environmental groups, church groups, labour unions, and any others whose primary concern is for human health and environmental quality and not the survival of the nuclear industry.

(2) Such an agency be independent of all Ministries of the Federal Government and would report directly to cabinet.