



As in many other countries much of the electricity in Sweden is based on nuclear power. Three of the biggest nuclear power plants are placed in southeast of Sweden, outside the city of Oskarshamn. In Oskarshamn the local newspaper Nyheterna is covering the production at the nuclear power plants, but also much of the discussion how to handle the waste from the plants. In order to produce nuclear power it is necessary to have uranium. That is why Nyheterna's journalists Fredrik Loberg and Mattias Rubin went to Canada.

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## Uranium causes many deaths



Photo: Mattias Rubin

## THE ORIGIN OF NUCLEAR POWER

In the Canadian village where the uranium to be used for producing electricity in Oskarshamn has been processed, a large number of people has been affected by lung cancer.

Historically also many mineworkers have suffered from this.

– But the worst thing right now is that large parts of the world's nuclear weapons production is made of uranium from here, Peter Prebble who lives in the nuclear capital, Saskatoon, says.

When we are driving 14 hours to the barge leaving for Wollaston Lake we meet about 20 trucks loaded from the huge pits. Uranium powder from Rabbit Lake, McArthur River and the other Canadian giant mines in Saskatchewan should be transported very far. The first real city that truckdrivers are driving through is Saskatoon, which is equal to the Swedish third city Malmoe.

Here in Saskatoon both the Canadian company Cameco Corporation, the largest uranium company in the world, and the French uranium and nuclear power giant Areva, have headquarters. Cameco and Areva has an important role for the economy of Saskatchewan. Businesses create jobs and the companies are keen to be seen as much as possible in a positive context.

Cameco is for example a very important sponsor of the university in Saskatoon and owns a kidney hospital here. Both the markets of Cameco and Areva are also often seen in the city's theater lobby.

- It upsets me tremendously that even not a hospital can be operated with public funds, but allow themselves to be bought by these companies, Stephanie Sydiaha says.

- It's frightening, the uranium industry and these companies has caused so much trouble.



*I find this is extremely disturbing and a shame for both this province and for the whole country, says Peter Prebble.*



*Cameco is a major sponsor to the University of Saskatoon, and has this inscription on the campus. Photo: Mattias Rubin*

### **A disgrace to the province**

Stephanie Sydiaha is one of the environmental movement's most important representatives in Saskatoon. Another is Peter Prebble, a former politician and now active in the organization Saskatchewan Environmental Society. He understands that uranium companies need to strive to be seen in favorable light.

- My very first objection is that the uranium from Saskatchewan has built up large parts of the world's nuclear arsenal, Peter Prebble says when we meet him at an ice cream bar in Saskatoon.

- For me this is a disgrace to both this province and for the whole country.

- Same thing with depleted uranium, used as ammunition in a large scale in the Iraqi war. Depleted uranium is a residue from the manufacture of nuclear fuel. It can be used as a radiation protection in connection with x-ray examinations.

More controversial it is also used as materials in tanks and ammunition. When the ammunition hits its target, it will be a fine powder, which can enter the human body through the lungs and stomach and into the kidneys and liver and poison cells.

The reports on how Iraqi children following the Gulf War suffering from cancer and birth defects for this war have been many. Suspicion exists that the diseases that a large number of returning American soldiers suffered was caused by depleted uranium.

Governmental Eldorado, which later became Cameco, broke the uranium in Port Radium in the Northwest Territories in Canada in the 1940s used for the nuclear bombs detonated over Hiroshima and Nagasaki in Japan in August 1945.

The Port Radium mine caused consequences for the indigenous population in the area.

## Died of lung cancer

Studies from Saskatchewan, until the 1970s, have shown an abnormal number of uranium miners suffering from lung cancer. 65 former miners who worked in the Beaver Lodge-mine between 1950 and 1980 died of lung cancer. But according to mining companies and the authorities there is no evidence that people who works in the mines now suffers at all.

Kevin Scissons is in charge at the Canadian Nuclear Safety Commissions, CNSC:s, headquarter for control of uranium mining in Saskatoon. He concludes that the mineworking has no negative environmental impact at all on communities in northern Saskatchewan.

- The law in Canada says it can have legal implications if the companies do not do the mining correctly. We could stop mining if its not following the rules.

- We had not done it the last few years, Kevin Scissons also says.

- 1998 or 1999 we made a decision to stopp. It had nothing to do with health or environmental impacts, but about that they had not received permission to start a new process. This was stopped about one month, Kevin Scissons says.

## Much is at stake



*- There will always be a big problem to take care of all waste safely, says Jim Penna.*

*Photo: Mattias Rubin*

Jim Penna and Eleanor Knight from Saskatoon's oldest organization critical to nuclear power, the Inter-Church Uranium Committe, thinks that neither Kevin Scissons and his authority nor state organization Health Canada is doing their job.

- There will always be a big problem to take care of all waste safely after the mining, due to the extremely long half-life of uranium substances. The companies still have not found a technique that works to take care of the material safely, Jim Penna says.

- There are so many examples of leaks from waste sites, but the worst is that the CNSC close their eyes and not give the companies proper punishment. We require basic health studies of current workers in the mines and of people living in these areas. There is nothing more than a scandal that this still has not been done, Eleanor Knight says. In Saskatchewan there are examples of leaking contaminated materials that had been known long after the uranium mining stopped. The most large-scale leak was discovered in northern Saskatchewan, the Gunnar Mine in the early 1990s. From old abandoned barrels, there was a large leak of radioactive material in the big Lake Athabasca.

## Cleaning up costs millions

Now, 20 years later, it seems to be a big clean-up. It likely will take several years and cost several million dollars. Gunnar Mine is close to the Uranium City, the world's largest mining area until the mines close down 1983. Now a deserted ghost town where only around 50 people still living. In the late 1970s and early 1980s, for example Sweden got uranium even from this area.

- The big question is how all waste after mining can be stored safely. It is only a few decades after the mine closed that it is possible to say whether the companies succeeded. If they fail, if it is leaking into groundwater, so we risk incalculable problems, Peter Prebble from the Saskatchewan Environmental Society says.

There are a lot of money, a lot of energy and many jobs at stake in the nuclear industry. Because of this Jim Penna, from the Inter-Church Uranium Committee, thinks that the authorities in the uranium mining countries have problems to see the environmental and health impacts in a serious manner. What is now needed is external pressure, from the UN for example, he says.

- Crucial for the future is likely if there is a much stronger UN resolution or not in terms of uranium mining. The present is not powerful enough and results not in some punishment in the countries where pollution occurs, or where people get affected, Jim Penna says. During our stay in Saskatoon, we had no representative for Cameco to agree to either interview or to accept us a place at any of the tours in the uranium mines sites in Saskatchewan. This was despite a total of 5-6 requests before and during our trip report. The company closed, apart from two short phone call later in our trip, to only communicate with us via e-mail.

After the trucks with uranium have drive through Saskatoon many of them continues thousands of kilometers towards east of Canada, through the neighboring Manitoba and staying in the southwestern part of Ontario Province.

Here, just outside of society Blind River, is the world's largest plant for converting uranium, which is also operated by Cameco.

Since 1983, the uranium from the mines in Saskatchewan going to Oskarshamn nuclear power plant, has been processed here. In Blind River uranium is converted to urantrioxid. Previously there were also another plant hear where the uranium was upgraded to a more highly active form.

There are people who are concerned about emissions of uranium vapor that spreads over surrounding region. Not far from here lies the vast mining area at Elliot Lake. There has also been uranium mining in this area.

The effect on the lives of indigenous people in surrounding region, all hazardous substances in the Serpent River, has been described in Magnus Isacson's award winning short film "Uranium" from 1990. Lorraine Rekmans, whose father worked in the underground mines and died from cancer in 2002, has written the book "This is my homeland", about how indigenous people affected by uranium mining in Elliot Lake.

For decades, uranium used for example in the Oskarshamn nuclear power plant, has been processed here. Oskarshamn company OKG state that their "Camecouranium" comes from Camecos Canadian mines. The system in terms of uranium imports saying that there should be original codes, indicating from which country or region, the uranium is taken.

At our first contacts with OKG in the summer of 2009 representatives of the company declares that uranium mainly comes from McArthur River mine in Saskatchewan, but also the Rabbit Lake mine, which is closest to Wollaston Lake, are used frequently.



*Road signs between Saskatoon and the sparsely populated parts of northern Saskatchewan warns of large trucks, particularly trucks carrying large quantities of uranium from mining areas.*



*Eleanor Knight is a volunteer in Saskatoons oldest anti-nuclear organisation. She houses a big archive in her basement.*

*Photo: Mattias Rubin*

## **Impossible to track**

But our inquiries and the responses we get to the end of Cameco says that there are no absolutely guarantee that at the uranium to the Oskarshamn originally comes from Saskatchewan.

Also from other mines around the world uranium is transported to the process in Blind River. During our trip in Canada, several people who worked for many years in upgrading facility in Blind River, says that it is impossible to track all uranium's original source.

- If someone says that it is possible to know how much a particular uranium mine serves a nuclear power plant is a pure lie. Uranium derived from several different countries and a number of mines are mixed in the process of Blind River, one of the workers we talked to says.

During the last days of our trip in Canada we get a telephone contact with a responsible informant on Cameco, Doug Prendercast, to ask about this.

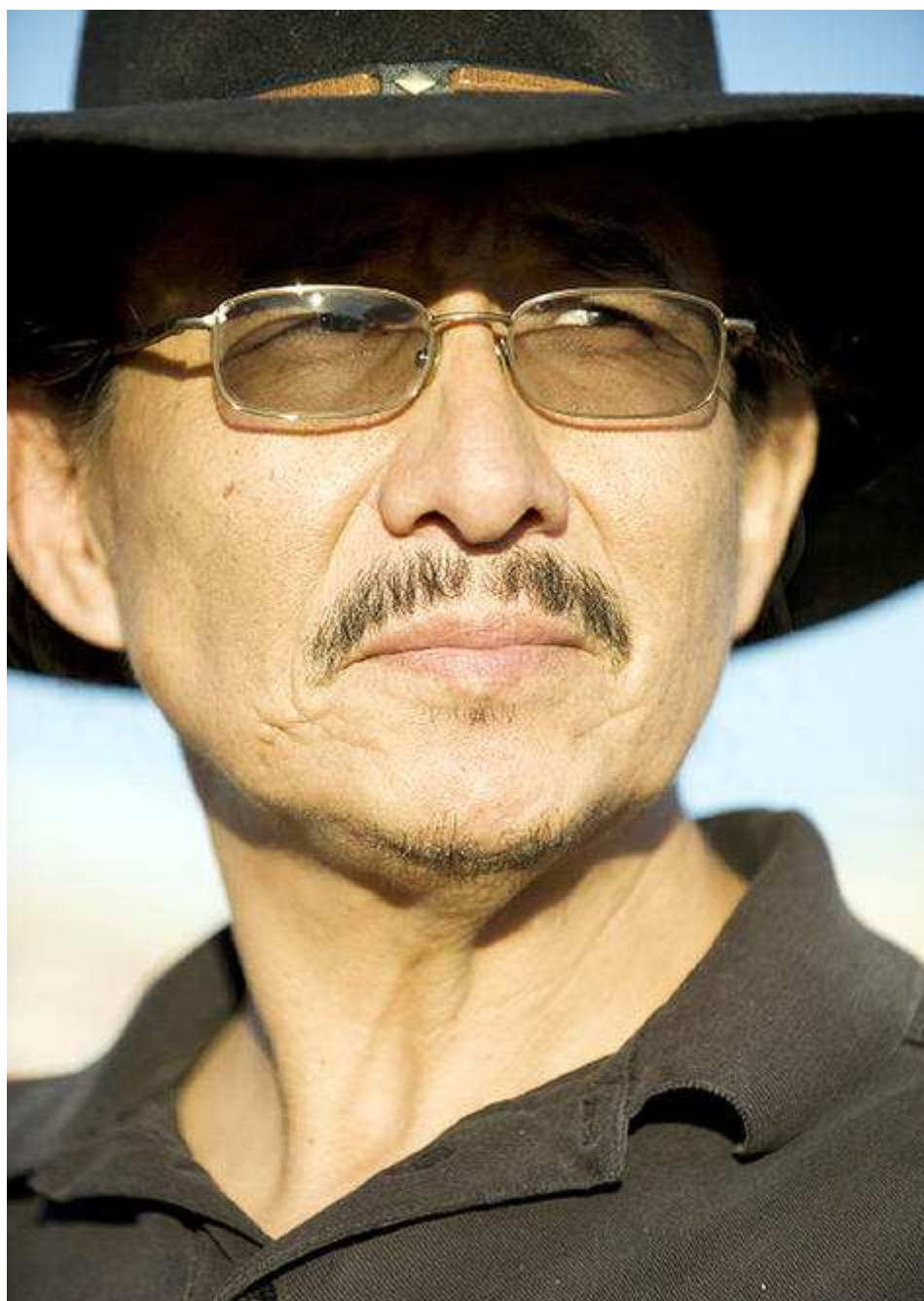
- Yes, we can trace the country and mine, but not all the uranium to hundred percent, Doug Prendercast says first. But only just about an hour later he calls back to us. He says:

- I must really apologize. I was wrong before when I called. Because of the process technology used in Blind River, we can not trace anything. My colleagues have told me that this is the way it is.

- Sorry I had wrong information earlier, but actually I've never had this question before. It is not possible to trace from which mines uranium going to Sweden comes from.

Doug Prendercast, who has worked as an informer for Cameco in 7-8 years, says that the uranium that comes to Blind River, and then carried on to countries including Sweden, can come from any country in which Cameco have uranium mines. These countries are, for example, the U.S. and Kazakhstan.

## "Our land is stolen"



*Marius Paul is still in strong opposition to the uranium industry.  
Photo: Mattias Rubin*

Thinking about the origin of Camecos uranium or not Oskarshamn nuclear power plant can get uranium from any part of the world. The company in Oskarshamn, OKG, explains sometimes having to fill out its uranium needs by buying from the open so-called spot market, and this uranium can according to OKG not be traced at all.

As another example of how incredibly complicated world uranium trade is, OKG in 2010 suddenly declares that this Swedish company only use Cameco regarding natural uranium. The trucks from Saskatchewan which in decades have rolled against the Blind River and the conversion process there will then now drive souther across the border to United States.

During this year the U.S. company ConverDyn is contracted for conversion, Alexander Lindqvist responsible for OKG's uranium supply, says. The reason is some production problems for Cameco, according to Alexander Lindqvist.

- We must be sure of supplies, he says.

## Good to deal with

Just like we have been told Alexander Lindqvist believes the U.S. radiation protection laws are stricter than the Canadian laws. OKG has also during its own check visit in the U.S. concluded that Converdyn is a good company to deal with. It is a company half-owned by Honeywell, which under the Peace Research Institute SIPRI is the world's 15th largest arms manufacturers and makes control systems for nuclear weapons. Honeywell is blacklisted by a number of ethical funds. After the Swedish Radio at the end of last year reported about the Nobel Foundations close collaboration with Honeywell, this cooperation has been criticized.

OKG stresses how vital it is to make their own checks, during the conversion but especially in mining areas.

According to OKG, contracts of buying uranium is made after careful evaluation of the supplier's environmental and quality programs.

- If our suppliers gets bad will, it could spill over to us and we do don't want that, Alexander Lindqvist says.

- We try to see as much as possible, meet with local politicians, representatives of trade unions and indigenous people so that we not only have the company's image.

During the autumn of 2009 OKG carried out a so-called auditing, an analysis on the ground in Canada.

- We saw nothing alarming, Alexander Lindqvist says.

Cameco has been in focus as a positive example. A year and a half ago, a seminar held in Malmö in Sweden, where Cameco told about their program to involve indigenous people in the uranium industry. Camecos efforts have got many positive reactions from uraniumbuyers like OKG.

During our trip in Canada and Saskatchewan, we visit another place where few Swedes have been, another First Nation reserve. It is located just outside society Meadow Lake and at the weekend when we arrive the annual "pow-wow" is going on. That is a colorful celebration of indigenous traditions with songs, dances and cuisine. One thousand people has arrived.



*Women wear clothes like this at the pow-wow festivities.*



*Men can wear these kind of outfits.*



*Photo: Mattias Rubin*

## Still angry

Here we meet Marius Paul. He has brought a bus with young people from another reserve area e, even further north, in Beaval. Marius Paul has been active in the resistance movement against uranium mining in Saskatchewan - in particular against the Key Lake mine, the world's largest uranium mine.

He has over the years participated in many demonstrations against the uranium industries consequences and he is still very angry.

- They have stolen our country, people have been forced to move and uranium mining has caused human illness. For us, the uranium is not anything good as it is for authorities, companies and people in Europe.

- For us it is a negative energy force, which also creates terrible weapons, Marius Paul says.

- We would need the whole world to look at these problems, but the major economic forces that are moving are more powerful, Marius says before he drives the bus back north from the festivities in Meadow Lake, to the reserve Patunak outside Beaval.

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