Residents offer varied perspectives

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level radioactive waste to a site away from the shoreline of Lake Ontario. The LLRWMO continues to meet with association members to identify their concerns and answer their questions. Other local people feel the recommendation to move the waste is the best option available for protecting the environment for future generations.

In Port Hope, many people favour consolidation of the Port Hope waste in one facility south of Highway 401 and west of Baulch Road. Comments include questions about the effects of truck transportation, visibility of the aboveground mound, plans for future development in the area of the proposed facility and the Legal Agreement that initiated the cleanup.

The environmental assessments continue over the next year with further opportunities for residents to have their comments considered.

Need information?

Have a question about historic low-level radioactive waste? Looking for environmental, health or technical studies? Want to comment on the Port Granby or Port Hope Project long-term waste management proposals?

Since 2002, the storefront Project Information Exchange (PIE) on Port Hope's main street has been the source for information on the two projects for the safe long-term management of historic low-level radioactive waste in the Port Hope and Clarington area. Open every weekday from 1:00 to 5:00 p.m., the PIE welcomes residents, visitors to the area and potential new residents who have questions, comments or would like to review documents.

Earlier this year, a Project Information Exchange specifically for the Port Granby Project operated in Newcastle Village. A month after the end of the public comment period on the Port Granby Project recommendations, this PIE closed. All Port Granby documents returned to the main PIE on Walton Street in Port Hope.

Technical documents and environmental studies for public review are also available at the Port Hope and Clarington Public Libraries.

Here's how to reach us:

Project Information Exchange
110 Walton Street, Port Hope

Hours:
Open 1:00 p.m. to 5:00 p.m.
Monday through Friday

Telephone: 905-885-0291
Toll-free: 1-866-255-2755
Fax: 905-885-0273
email: info@llrwmo.org
website: www.llrwmo.org

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Low-Level Radioactive Waste Management Office

Natural Resources Canada | Ressources naturelles Canada | AECL Atomic Energy of Canada Limited | EACL Énergie atomique du Canada limitée | Canada

Low-Level Radioactive Waste Management Office

Spring/Summer 2004

News

Port Hope Project | Port Granby Project

Moving forward...

This updated timeline shows where the Port Hope and Port Granby Projects are today and where they're headed.

In This Issue:

- Discussing clean-up standards
- How the U.S. cleans up
- You asked?
- Talking with residents

Computer image of an aboveground mound

2004
- Stakeholder comments on recommended long-term waste management concepts addressed;
- Potential project effects on the natural environment, community life and human health are assessed;
- Public consulted on effects.

2005
- Studies and consultation finalized in environmental assessment (EA) reports to federal authorities;
- Detailed facility design, continued planning and scheduling for construction and cleanup;
- Facility licensing process begins.

2006-2007
- Public consulted by federal and municipal governments on EA findings and facility licensing;
- Decisions on EA reports and facility licences;
- Pre-construction activities begin.

2007-2013
- Properties in Ward 1 Port Hope resurveyed;
- Facility construction and clean-up phases underway;
- Community liaison continues.

2013-Ongoing
- Long-term management facility monitoring and maintenance

Recommending clean-up standards for generations

Discussions between the Low-Level Radioactive Waste Management Office (LLRWMO), provincial and federal government agencies, the municipalities, public and other stakeholders will focus on clean-up criteria over the next several months. Central to this review will be a Discussion Document that explains the results of research and scientific testing that have led to proposed standards for the Port Hope Area Initiative cleanup.

What are Clean-up Criteria?

Clean-up criteria establish measurements for safe levels of radiological, organic and other contaminants in the air, soil and water. The criteria will help determine the volume of material to be excavated and managed in the long-term facilities. They will also assure the safety of construction activities by providing limits for closely monitoring air, soil, groundwater and surface water.

How the proposed criteria were developed

"Generic" or standard criteria exist for most of the contaminants found in historic low-level radioactive waste. Agencies such as the Ministry of the Environment and Canadian Nuclear Safety Commission (CNSC) and scientific advisory bodies such as the International Commission on Radiological Protection accept these levels as protecting human health and the environment. Where applicable standards do not exist, specific criteria were developed for the Initiative. The LLRWMO hired Stantec Consulting Ltd., an international environmental consulting firm, to study clean-up criteria.

Planning for the future

The criteria will provide for current and foreseeable unrestricted land uses. In Ward 1 Port Hope, for example, it can be reasonably assumed that most land, regardless of its present use, may someday become residential. In a few areas, such as around the viaducts and at the Centre Pier in Port Hope, site-specific criteria will be discussed. Certain future land-use restrictions may be preferable to cleaning up to a level that could destroy the character of these areas.

Did you know…

All of the radioactive elements (such as uranium and its radioactive decay products) and associated metals (e.g. lead, nickel, arsenic) found in historic low-level radioactive waste occur naturally in all soil. In the waste, they occur in higher concentrations than in normal area soil.

Soil that has come in contact with the waste will also be cleaned up during the Initiative. It contains much lower concentrations of the same elements than the waste.

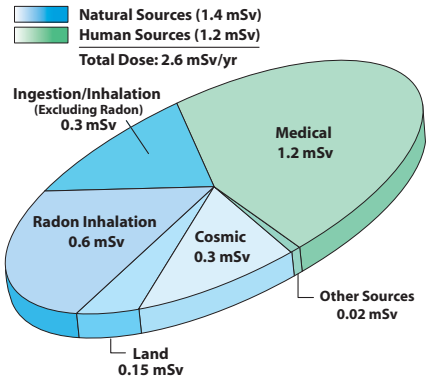
The historic low-level radioactive waste found in the Port Hope area is the result of past radium and uranium refining. It is not unusual, though, for soil in older urban areas anywhere to contain elevated levels of these contaminants. Practices such as the use of metals in paints, gasoline and batteries and the former burning of coal for heat are common sources.

Where human health and clean-up criteria meet

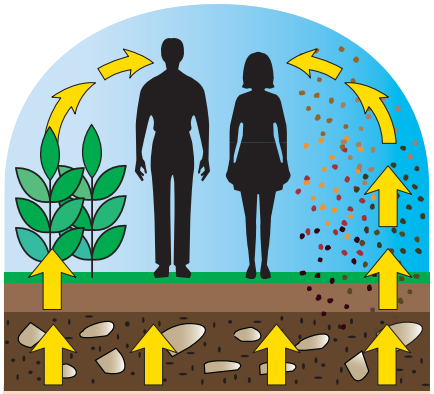
Everyone is exposed to radiation. Naturally occurring or background radiation comes from the sun, air, ground and food we eat. Other radiation comes primarily from medical uses such as X-rays. Understanding typical sources of human exposure is helpful to understanding the development of clean-up criteria. Natural radiation is often used as a standard to assess the impact of human sources of radiation.

In addition to everyone's typical exposure *(see pie chart)*, the CNSC sets a limit of 1 millisievert (mSv) per year for the public's exposure from licensed nuclear sources of radiation. This limit applies to the construction and long-term management phases of the Initiative. In developing the clean-up criteria, Stantec worked backwards from the 1 mSv/yr limit to establish a criterion for each radioactive element that would ensure a person's total exposure from all possible sources (soil, air and water) would not exceed 1 mSv/yr. Then to allow for possible exposure to more than one licensed source (nuclear generating stations, Cameco, etc.), the criteria were further adjusted downward. In the end, the Initiative will use the clean-up criteria to ensure exposures are only a fraction of the 1 mSv/yr dose limit.

Typical Annual Dose (rounded) for adults living in Port Hope/Clarington area



The pie chart shows the typical sources of radiation exposure for an adult living in Port Hope and Clarington. Average yearly exposure from these sources totals 2.6 millisieverts (mSv) a year, which is slightly lower than the Canadian average of 3 mSv/yr.



Pathways: from soil to human

Soil clean-up criteria are designed so the total exposure a person receives from various sources (pathways) remains within acceptable limits. These sources include absorption of metals and radioactive elements by breathing in dust, eating crops that take up contaminants, incidentally eating soil and from gamma radiation and radon gas emitted from the soil.

Who approves the criteria?

The LLRWMO will review its recommendations with government stakeholders and the public. Ultimately, the criteria must be approved by the Canadian Nuclear Safety Commission.

The Discussion Document on Clean-up Criteria Development will be available later this summer for public review at Port Hope and Clarington libraries and at the Project Information Exchange. People interested in discussing clean-up criteria should phone Sandy at the Project Information Exchange at 905-885-0291.

South of the border…

Where historic low-level radioactive waste is also being cleaned up

Across the U.S., the story is told over and over:

North St. Louis County, Missouri, March 2000: 3,800 cubic metres of soil contaminated with low-level radioactive waste are excavated from a commercial property. In all, 78 properties totaling about 149,000 cubic metres of material are being cleaned up.

Maywood, New Jersey, February 2003: Cleanup of over 6,000 cubic metres of thorium-contaminated soil and debris is underway at three commercial properties. Earlier cleanups removed about 33,000 cubic metres of contaminated soil from residential areas – enough waste to cover a football field six metres in height.

Tonawanda, New York, March 2004: Five buildings and over 66,500 cubic metres of contaminated material have been removed; over 15,000 cubic metres remain.

Soil contaminated with low-level radioactive waste is being cleaned up in small towns and cities across much of the U.S. Just as Eldorado processed ores to extract radium and uranium in Port Hope, many U.S. industries refined uranium, radium and thorium during the early years of the U.S. atomic energy program.

Take the example of Maywood, New Jersey, a community of 9,500 people where the former Maywood Chemical Works extracted radioactive thorium for commercial purposes until 1959. Waste buried on the site, adjacent to a stream, contaminated other properties. Contaminated soil was offered as fill. The result: 64 residential and 24 commercial properties were affected – totaling an expected volume of more than 280,000 cubic metres of waste.

In 1997, the U.S. government charged the U.S. Army Corps of Engineers, a group of military and civilian engineers and scientists, with cleaning up 23 remaining contaminated sites across the U.S. Most of the properties contain soil contaminated with low-level radioactive materials similar to those found at Port Hope and Port Granby.

Each clean-up project follows a process similar to the Port Hope Area Initiative's requirements under the Canadian Environmental Assessment Act. Each U.S. project must identify waste types and quantities, evaluate and propose clean-up approaches, set its own clean-up standards, assess potential risks and consult the public.

In the U.S, clean-up methods are applied daily

Approaches to a variety of waste management issues are being demonstrated at U.S. work sites cleaning up low-level radioactive waste. At the thorium-232 cleanup in Maywood, New Jersey, precautions taken during excavation eliminate the need for workers to wear respirators.

Although the primary exposure from thorium is by inhalation, keeping the soil moist prevents contaminants from becoming airborne. Allen Roos, Program Manager for the Corps' New York District and Maywood Project Manager, says on-site radiation technicians guide the excavations, determining when soil needs to be sprayed. Construction workers wear lapel air samplers that are analyzed regularly.

Each project is unique. At the Linde site in Tonawanda, New York, uranium was refined during the 1940s. Alarm monitors have been mounted on the roof of a school, just yards from the site, to address residents' concerns. Air sampling has consistently shown no increased radiation levels at the school. Nevertheless, parents know the alarms would sound and construction would stop if emissions ever exceeded acceptable thresholds.

This article was prepared through interviews with U.S. Army Corps of Engineers personnel. To find out more, links to the project websites can be found at www.llrwmo.org.

LLRWMO has over 20 years of clean-up experience

In the U.S., the Army Corps of Engineers assumes responsibility for the cleanup of designated historic low-level radioactive waste. Since 1982 in Canada, nation-wide responsibility for the safe removal and handling of historic waste has rested with the LLRWMO.

Some of the office's experience includes:

- Port Hope cleanup – 1980s-present – of various sites such as Brewery Pond, Highland Drive area and Waterworks lands contaminated from historic Eldorado refinery operations;
- Scarborough cleanup – 1995-1996 – of about 60 residential and commercial properties contaminated by historic radium processing operations;
- Northern Transportation Route cleanup – 1992-2002 – of about 50,000 cubic metres of soil contaminated from historic shipment of uranium and radium ores from the Northwest Territories to Fort McMurray, Alberta;
- Surrey, B.C. cleanup – 1999-2000 – of about 5,000 cubic metres of thorium-contaminated soil from the refining of niobium ores;
- *And today…* ongoing monitoring and cleanup of historic low-level radioactive waste in Port Hope and across Canada as needed.

You asked?

I'm worried about my property value once the cleanup starts. Should I get an appraisal now?

It isn't necessary to have your property appraised for the Property Value Protection (PVP) Program. Under the PVP Program, owners who sell or rent their property for less than its fair market value because of the projects are eligible for compensation. Once a seller files a claim for compensation, PVP Program staff will determine, using a database of actual sales since 1999, what the fair market value of the property would have been if the Initiative were not underway. In the case of one-of-a-kind properties, unusual circumstances or properties valued at more than $250,000, the PVP Program office will hire an independent appraiser.

The PVP Program only takes effect once I sell my property, but what if I can't sell at all because of the project?

Since the start of the Port Hope Area Initiative in 2001, no generalized decline in market values resulting from the Initiative has occurred. Although short-term site-specific effects are to be expected as the projects move forward, both the Cobourg-Port Hope and Durham Real Estate Boards continue to report that the demand on area real estate is strong. Losses in value that may result from transportation or construction activities will be temporary. In the very rare instance that an owner believes a property cannot be sold because of the Initiative, the PVP Program will review the case.

Trucks are monitored for radiation and securely covered before transporting waste.

When will the cleanup start and how long will it take?

The Port Hope and Port Granby Project construction phases are at least two years away. Cleanup and construction are expected to take from five to seven years. In Port Hope, clean-up activities will be sequenced, so not all transportation routes or areas will be affected at once. Scheduling of these activities is currently being developed.

In Port Granby, the proposed transportation route is expected to be used from one to three months during the first and second years of the project and from three to five months during the project's final year to carry construction materials to the proposed site. Waste would be transported from the current site to the proposed facility across Lakeshore Road on a dedicated access road.

Is the PVP Program the only way you will deal with the effects of the project on my life?

During the next six months, residents will be consulted about ways the projects might affect their lives. A socio-economic effects assessment will develop ways to reduce potential negative effects such as noise, dust and traffic disruption. Local residents were surveyed this spring about how they use and enjoy their property and neighbourhood. They were asked how they feel the Initiative might affect their daily activities and general satisfaction with living here.

As communication assistant, Sandy finds her ideal role

Sandy Holmes' love affair with civic involvement began in 1988 when she attended a meeting of the Port Hope Environmental Advisory Committee. She joined a committee looking into the extension of the former landfill and, a few years later, found herself on the Port Hope Community Liaison Group (CLG), part of the federal Siting Task Force to find a host community for the historic low-level radioactive waste.

The process ended, and in 1998 Sandy was appointed to council's committee to develop a local long-term waste management solution.

Today Sandy is the face of public information at the Initiative's Project Information Exchange at 110 Walton Street, Port Hope. "It suits me," says Sandy who, with husband Terry, has raised three grown sons in Port Hope. "I really feel as though I'm working toward something very good for my community."

Talking with residents

This spring, during three months of Open Houses, community meetings, neighbourhood gatherings, e-mails and telephone conversations, over 1,000 local residents talked to the LLRWMO about its recommended concepts for the Port Hope and Port Granby Projects.

Gathering comments from people in neighbourhoods throughout Port Hope and eastern Clarington, project team members heard many varied perspectives. For example, residents nearest to the Port Granby site have formed the South East Clarington Ratepayers Association to oppose the relocation of the existing low-

continued on page 8

Port Hope residents Jack and Sheila Goering speak with LLRWMO Communications Officer Sue Stickley at an Open House in Welcome.