

SUMMER 2018 CONNECTION



The Future Looks Strong For Genesee

We are embracing the challenge of carbon transformation and actively working to create solutions for a sustainable, low-carbon future.

The Genesee Generating Station is a world-class leader in the transition to a lower carbon future. A number of new approaches and technologies are being tested at Genesee, which allows us to assess and evaluate options to reduce and eventually eliminate coal as part of our fuel mix. In 2017, we completed the first year of the innovative five-year Genesee Performance Strategy (GPS), a \$50 million efficiency improvement program aimed at reducing coal consumption and our carbon footprint by 11% by 2021.

Looking ahead, the outlook for the Genesee Station is a full-scale conversion to natural gas. We anticipate a decision on the timing of converting the units to natural gas in 2020, and the company's plan is to convert the units in a staged approach.

We tested co-firing solid biofuels with coal, which could replace up to 15% of the coal used by a single unit and further reduce our emissions and reliance on coal pre-2030, the date set by the Government of Alberta for coal plant retirements.

As our existing operations transition to support a low-carbon future, our vision is that Genesee continues to play a vital role supplying Alberta's electricity needs.

Have a safe and happy summer!

Sincerely,

SEAN FUREY, Plant Manager

Genesee Generating Station, Capital Power



Sean Furey with his grandson.

Hello Neighbours and Friends,

As you will read in this summer edition, we see ourselves as more than just a power generator. We wanted to share some of our recent innovations and successes:

- Technology – process improvement through our high efficiency rotor replacements and the ENX classifier facility;
- Wildlife – Peregrine Falcon nesting site on the G3 stack;
- Environmental and reclamation initiatives – vegetation management research, pilot projects and planting 35,000 trees in May; and
- Our commitment to safety – awarding of the 2017 John T. Ryan Award to Westmoreland Coal Company and the 2017 Capital Power President's Safety Award (Bronze) to Genesee Station.

Community Mine Tour Showcases Our Reclamation and Reforestation Initiatives at Genesee



Outside Genesee Hall, 130 mine tour attendees await the BBQ dinner provided by local caterer Maureen Scheideman.

On June 27, Capital Power and Westmoreland Coal Company hosted a barbecue and mine tour at Genesee for 130 local-area residents. The tour was an opportunity for Capital Power and Westmoreland to meet and socialize with the community that surrounds Genesee, and share some of our operations and ongoing activities with our neighbours.

The tour started with an emphasis on road safety. Last year, a new county road was opened to the public on the south side of the Genesee cooling pond (TWP 503A) that crosses a mine haul road. Although the intersection is clearly marked with stop signs, unfortunately some vehicles are known to go straight through on occasion. To emphasize the importance of safety and the need to stop, we staged a demo. Attendees saw a truck that was purposely crushed by a mine haul truck earlier in the day to show the consequences of not stopping at an intersection within an active mine.



Attendees view a sobering safety visual – a truck purposely crushed by a mine haul truck.

The tour then turned to our reclamation activities. We are in the third year of a five-year study lead by researchers at the Northern Alberta Institute of Technology (NAIT). The goal of the study is to find ways to reduce agricultural weed competition with trees when reclaiming mine land to forested area. A variety of strategies are being tested, including planting desirable companion plants with trees, and the use of different mulches and herbicide.

Moving on to another reclamation area, Forest Reclamation Specialist Eckehart Marenholtz, a long-time collaborator on our reforestation work, spoke about the ongoing research at the east wetland. The main goal of the research is to test different approaches to establishing wetlands with fast site-occupancy of desired woody and herbaceous species.

Always a tour favourite, guests then saw the massive Marion 8750 dragline. At 15 million pounds, the machine has a bucket as large as a two-car garage that can carry 110 cubic yards of material per scoop. It's powered by electricity from the plant and consumes as much power as a town of 5,000 people.

The tour also included a trip around the outside of the Genesee Station to view the coal storage and transportation and processing areas, the cooling pond, water intake canal, substation and proposed location of the Genesee 4 & 5 Project.



The picturesque east wetland area.



Tour attendees at the site of the NAIT research plot with Genesee Station in the background.

Natural Sciences and Engineering Research Council of Canada (NSERC) Industrial Research Chair-Boreal Reclamation and Reforestation program Dr. Amanda Schoonmaker describes the vegetation management research, including a smaller pilot project in 2017 and a large-scale field experiment that began in May 2018.



Paul LePage, Senior Surveyor at Westmoreland, entertained the crowd with folk tunes during dinner.

Genesee Hosts Our Neighbours - Village of Warburg and Leduc County



The cooling pond and rolling hills of the Genesee Mine reclaimed land provide the perfect background atop Genesee Unit 2.

On June 18, Capital Power welcomed 14 councillors and staff from the Village of Warburg and the County of Leduc to the Genesee Generating Station. The municipal officials attended as part of regular meetings, where representatives from the County and Village meet with Capital Power and Westmoreland Coal to discuss ongoing and future plant and mine operations and stakeholder engagement activities.

While at Genesee, the group received a tour of the facility led by Craig Butler, Senior Manager, G3 Production and Ian Ur vold, Senior Mechanical Maintenance Engineer, showing how the facility reliably produces base load electricity for Albertans.

Following the tour, Sean Furey, Vice President Solid Fuels, and Darcy Trufyn, Senior Vice President Operations, Engineering and Construction led a Q&A and roundtable discussion. One of the greatest areas of interest was learning more about Capital Power's plans for Genesee following the phase out of coal emissions in 2030, and the viability of natural gas as a future energy resource.

Sean and Darcy explained that Capital Power is committed to transitioning Genesee to a low-carbon future, and the facility is well-positioned to maintain its role as an industry-leading generation facility supplying Alberta's future electricity needs beyond 2030. Capital Power anticipates a decision on the timing of converting the units to natural gas in 2020 and the company's plan is to convert the units in a staged approach.

"ONE OF THE GREATEST AREAS OF INTEREST WAS LEARNING MORE ABOUT CAPITAL POWER'S PLANS FOR GENESSEE FOLLOWING THE PHASE OUT OF COAL EMISSIONS IN 2030...."

Genesee Mine Receives National Recognition for its Commitment to Working Safely



Genesee Mine - John T Ryan Award - Left to right: Cameron Smith, Former General Mine Manager; Les Fedor, Electrician; Bruce Kyle, Shovel Operator; Wesley Meyerink, Safety Manager; Gord Winkel, Chair of the John T. Ryan Committee.

Congratulations to the Genesee Mine on winning their 13th John T. Ryan safety award!

During the Canadian Institute of Mining (CIM) Convention in May, Westmoreland Coal Company, which operates the Genesee Mine, received this national coal award for achieving the lowest reportable injury frequency per 200,000 hours worked in Canada.

The Mine boasted an impressive zero reportable injuries and zero lost-time incidents during 2017. To achieve zero incidents, the mine continuously invests in new technology, holds safety and training programs for employees, and builds a culture of safety to ensure workers make it safely home to their families each day. The fact the mine runs 24/7 with more than 120 workers proves that no matter the job, zero is attainable.

"TO ACHIEVE THIS PERFORMANCE TAKES THE DEDICATION AND EFFORT OF EVERY EMPLOYEE AND THEIR FOCUS ON PUTTING SAFETY FIRST. GENESSEE MINE OWES THIS ACHIEVEMENT TO ITS EMPLOYEES, WHOSE STRONG SAFETY CULTURE HAS EARNED ACCOLADES ONCE AGAIN."

— WESLEY MEYERINK, GENESSEE MINE SAFETY MANAGER

Capital Power congratulates Westmoreland for their outstanding accomplishment and commitment to working safely.

TIM DOUCETTE RETURNS AS MINE GM

The Genesee Mine is happy to welcome back Tim Doucette as General Manager. Tim previously held the role from 2012 to 2016.

2017 President's Safety Award

Since 2012, Capital Power has annually recognized and celebrated the facilities, projects, and support services that achieve exceptional safety performance within three categories. First year achievements are bronze, second year are silver, and gold is for three or more years of exceptional performance. Award criteria are based on the number of hours worked in the period and recognize the size and risk diversity across the Capital Power fleet.



Jarrett Berezan, Senior Manager Coal Production accepts the 2017 President's Safety Award (bronze level) on behalf of the Genesee Generating Station from Capital Power President & CEO Brian Vaasjo.



Peregrine Falcon Chicks Get ID'ed at Genesee

On June 28, Alberta Environment and Parks banded our newest Genesee residents — four three-week old Peregrine Falcon chicks, who were born in the nesting box on Genesee Unit 3's stack. The chicks, known as *eyasses*, were outfitted with identification bands so scientists can learn more about the threatened species movements and behaviour.

A local bird watching group, which follows the birds on the live Genesee Falcon Webcam, was invited to watch the banding. The bird enthusiasts had the opportunity to see the chicks up close, and of course, get pictures. Vinny, a six-year old male Peregrine Falcon who is being rehabilitated for an injured wing, was also on hand for spectators to hold.

Having hatched just three weeks earlier, the eyasses were the perfect age for banding because they could not walk and have not yet developed their flight feathers. This made the process much safer for the chicks and ensured the correct bands were applied. After banding and a quick check-up, the chicks were deemed healthy and were safely returned to their nesting box.



Dr. Gordon Court, Provincial Wildlife Status Biologist with the Government of Alberta proudly shows off Vinny, a six-year old male Peregrine Falcon, to the crowd that gathered to watch the falcon chick banding.

TAKING FLIGHT

The eyasses will develop their flight feathers and will make their first attempts at flying. After their first flight, they are referred to as fledglings, and still depend on the adult falcons until they can hunt for themselves.

BIRD'S EYE VIEW

The nesting site at Genesee has been part of the recovery and maintenance of the Peregrine Falcon population in Alberta since the early 1990s. Since 2005, Capital Power has been streaming live images of the falcons to share a bird's eye view of falcon life and how they survive and thrive in nature.

Unfortunately, the camera malfunctioned in July and will remain offline. We hope to have the camera working again in time for next season.

WE ARE GOING BEYOND...

Capital Power released its annual Corporate Sustainability Report, Going beyond...

Read the report at www.capitalpower.com/responsibility

ENX INC. Classifier Facility at Genesee

ENX INC. supplies Genesee-sourced fly ash to customers throughout North America. In 2017, 53% of fly ash produced from Genesee 1 & 2 was recycled for use in cement (instead of being landfilled), up from 44% in 2016. Fly ash from Genesee 3 has historically been unusable in concrete products due to the lime it contains from the desulphurization process.

However, ENX INC. has created a way to process it so that the lime does not interfere with the quality of the cement. A classifier facility was built on Genesee Mine land to process fly ash from Genesee 3, which can then be sold to concrete producers in Canada and the U.S.

Using one tonne of fly ash as a substitute for one tonne of Portland Cement in manufactured concrete reduces carbon dioxide emissions by approximately one tonne.

Tree Planting Extraordinaire – 35,000 Trees in Five Days

In May, Capital Power's forestry consultant, Chickadee Reclamation, planted 35,000 trees including Spruce, Aspen, Balsam Poplar and native plants such as Goldenrod and Fireweed in just five days at the Genesee Mine as part of our continuing land reclamation efforts.

This year's tree planting reclamation was completed with the help of NAIT's Boreal Forest Research Institute. The research facility helps develop scientifically proven and cost-effective reclamation methods, products, and information to ensure that the reclaimed area meets all regulatory requirements.



Over the past 10 years, roughly 250,000 trees have been planted as part of our continuing reclamation efforts at the Genesee Mine. Land reclamation at the mine began just after its opening in 1989.

Natural Gas Pipeline Construction to Begin in Fall

To support the coal-to-gas transition at Genesee Station and to optimize the coal/gas co-firing until a decision on conversion timing is made, a new natural gas pipeline is scheduled to start construction in the fall of 2018.

The pipeline, which will be built, owned and operated by a third party, would add enough gas capacity to convert the existing three Genesee units, as well as support the addition of Genesee Units 4 and 5.

G4/5 Project Schedule

Capital Power and Enmax Corporation continue to assess the timing for starting work on the Genesee Unit 4 and Unit 5 Project (G4/5). Continuation and timing of the Project will be further considered once greater certainty exists with respect to the Alberta market transition, and new generation required to balance supply and demand.

The current Alberta Utilities Commission (AUC) approval for G4/5 stipulates that construction of both units be completed by December 31, 2018. Commercial Operation Dates (CODs) for G4/5 are now anticipated to be November 2022 and December 2023, respectively.

Due to the change, Capital Power and Enmax Corporation intends to submit an application to the AUC requesting approval of a time extension to reflect the newly targeted CODs for each respective unit.

Supporting Safe Hunting at Genesee

The Alberta Hunting Education Instructors Association (AHEIA) has successfully managed public access for hunting on Capital Power land at Genesee for over 10 years through a program called Hunting for Tomorrow, enabling managed access to Capital Power's extensive land base.

Each fall, Capital Power opens some of its land for low velocity hunting to hunt deer, elk and moose living on the property. Low velocity hunting uses primitive weapons including black powder rifles, crossbows and shotguns.



George Greenhough, Land Services Manager and Jennifer Linder, Site Service Manager provide a donation from Capital Power to Chuck Strong (left) from Alberta Hunting Education Instructors Association. Capital Power's contribution will continue to help manage the organization's Hunting for Tomorrow program.

Tree Planting, One Year Later

On June 10, 2017, Capital Power employees and their family members joined 74 community members from the Village of Warburg to plant 450 trees to leave a legacy of Canada's 150th anniversary. One year later, we're happy to report the trees are doing well and thriving. The previously empty field is now full of 21 different varieties of trees and shrubs, including: bur oak, peach-leaf willow, balsam poplar, mountain alder, white spruce, pussy willow, wild rose and two Lodgepole pines, Alberta's provincial tree.



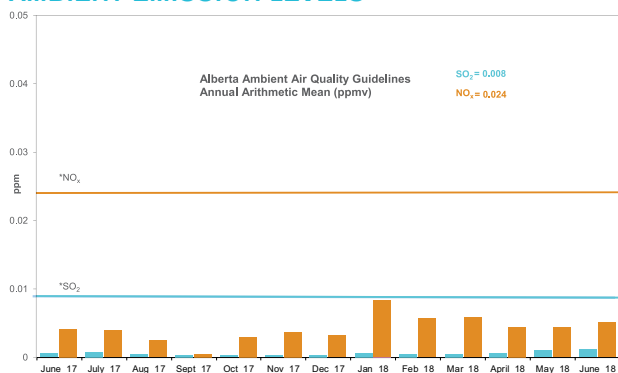
Genesee Station Environmental Performance

The following graphs show the most recent environmental performance results:

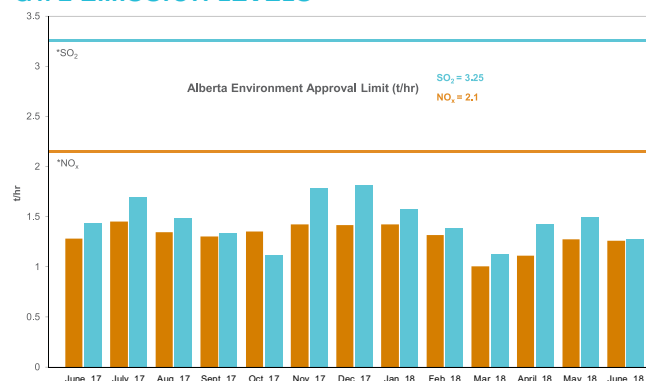
- Ambient air quality as measured by the Genesee ambient air monitoring trailer;
- Stack emissions for stack one (for generating units 1 and 2);
- Stack emissions for stack two (for generating unit 3).

Measurements are compared to guidelines and approval limits set by Alberta Environment & Parks. Genesee continues to operate below maximum levels set for ambient air quality and stack approval limits.

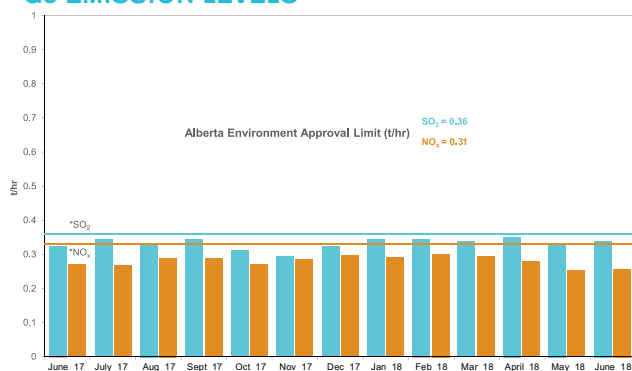
AMBIENT EMISSION LEVELS



G1/2 EMISSION LEVELS



G3 EMISSION LEVELS



**Sulphur Dioxide (SO_2): a strong smelling, colourless gas that is formed by the combustion of fossil fuels. In high concentrations, SO_2 is known to be harmful to vegetation and human health. SO_2 is soluble in water and excessive levels can lead to sulfuric acid deposition or acid rain.*

Nitrogen Oxides (NO_x): the term used to describe NO (nitrogen oxide), NO_2 (nitrogen dioxide) and other nitrogen oxides. The major sources of man-made NO_x are high-temperature combustion processes, such as those occurring in automobiles and power plants. When concentration is high, NO_x is of concern because it contributes to ground-level ozone or smog. Genesee 3 approval limits are based on a 720 hour rolling average.

Note: All results are converted to reference standard conditions to be comparable to other coal fired plants in Alberta and elsewhere, and are dry concentrations corrected to 50% excess air; ppm: parts per million. An example of the quantity of Sulfur Dioxide and Nitrogen Oxides measured at ambient air sites in parts per million would be equal to approximately 1/100th of a grain of salt per breath of air. G3 has separate approval limits from G1 and G2 for its stack emissions. G3 approval limits are in terms of a mass emission rate (i.e. tonnes per hour). To be consistent for all units, we have shown G1 and G2 emissions and limits in tonnes /hour as well.

Effective February 1, 2016, new G3 permit levels have decreased sulfur dioxide limits from 0.76 t/hr to 0.36 t/hr [on a monthly (i.e. 720 hour) rolling average] and decreased NO_x from 0.54 t/hr to 0.31 t/hr [on a monthly (i.e. 720 hour) rolling average].

DELIVERY CHANGE

To reduce paper use, we are **discontinuing** hardcopy delivery to postal code **T7Z 1A0**. If you would still like to receive the newsletter, contact our Stakeholder Engagement team (see back page for contact info) and we'll ensure you remain on our distribution list.

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WHAT IS IMPORTANT TO YOU?

If you have an idea or suggestion for the Genesee Connection Newsletter, contact Stakeholder Engagement and help us continue to provide relevant information of interest to you.

GENESEE CONTACT INFORMATION

If you have questions or comments about our operations, community engagement or our land management practices, please contact us.

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Capital Power Website
www.capitalpower.com



Careers

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