

History of Five Nations Energy Inc.

By Mr. Ed Chilton

Background

Prior to the construction of the high voltage transmission lines between Moosonee and Attawapiskat, electricity in the communities was produced by diesel generators which were noisy, air polluting, unreliable, and did not have the capacity to allow unhindered growth. In Fort Albany, the generating plant was attached to the hospital and in Attawapiskat, in the middle of the community near the schools and hospital. To fuel the plants, about 5,000,000 litres, about 1,100,000 gallons of diesel fuel was transported by barge, winter road and at times, by air. There were many incidents of fuel spillage, some reported and some not.

Under an agreement between Indian and Northern Affairs Canada (INAC) and Ontario Hydro (now Hydro One), the diesel generation plants and the local distribution lines were paid for by INAC and then the ownership was transferred to Hydro One and then the operation, maintenance and administration (including the billing and collecting) was taken over by Hydro One.

One of the problems facing the communities was that the plants were never built large enough to accommodate future growth. Housing projects and the construction of water and sewage plants, schools, recreation facilities, and other infrastructure, were often delayed while waiting for the upgrades to the generation plants. Once the plants were upgraded, the capacity of the plants were exceeded as soon as housing projects were built and the communities had to wait until the next upgrade was scheduled before more building could take place. The scheduling for the upgrades to the generation plants was dependent on the budgets and priorities of INAC. The backlog for housing continued to be an ongoing problem. The chronic shortage of electricity presented an economic and social barrier to the development of the communities.

Moving Forward

The Mushkegowuk Council, with the leadership of the three Chiefs from Attawapiskat, Kashechewan, and Fort Albany, recognized this problem and undertook an Energy Study to de-

termine the best solution to this problem. Upon reviewing the different methods of generation including wind, solar, biomass, small hydro, diesel generation, or a combination of different methods, the conclusion was that an extension of Ontario's transmission system at Moosonee to the north was the most feasible solution to the problem. When the findings of the report was presented to Ontario Hydro, a high ranking official of Ontario Hydro indicated that they would not build a transmission line on the West Coast of James Bay. When the Chiefs learned of the lack of support from Ontario Hydro, they said that if they won't build a line, we will. At an Annual Assembly of the Mushkegowuk Council, a resolution was passed addressing this problem and supported the development and construction of a transmission line between Moosonee and Attawapiskat, also serving Fort Albany and Kashechewan. In September 1997, Five Nations Energy Inc. (FNEI) was incorporated under the *Canada Corporations Act*. FNEI selected SNC Lavalin Inc. to undertake a feasibility study in 1997 which was positive and the Chiefs decided to proceed with construction. A confidence report was completed by Stone & Webster on the technical and engineering aspects of the feasibility study and by Scotia Capital on the financial aspects. Both confidence reports confirmed that the project was viable which assisted in the financing which FNEI would require.

Omushkego Ishkotayo Project

The project consisted of approximately 270 kilometres of 115 kV high voltage line tied into Hydro One's facilities at Moosonee, and followed the existing winter road to the extent possible, passing through the traditional territories of the Moose Cree, Fort Albany, Kashechewan, and the Attawapiskat, First Nations. Substations were also constructed in Moosonee, Fort Albany, Kashechewan, and Attawapiskat. Clearing for the transmission line right-of-way began in March 2000 and pole construction started in December 2000. The line was energized and Fort Albany was connected in November 2001 and Kashechewan in December 2001. Construction of the section between Kashechewan and Attawapiskat was completed in March 2002 and Attawapiskat was connected in the fall of 2003.

Telecommunications

In the 1970's, the Ontario Northland Transportation Commission installed an analog microwave telecommunications system from Moosonee north which was the introduction to long distance telecommunications to the communities of Fort Albany, Kashechewan, and Attawapiskat, on the west coast of James Bay.

During the community consultations, there was much discussion regarding whether FNEI would improve the telecommunications system as part of the transmission project. This was necessary as the microwave system installed in the 1970's was obsolete and did not provide the communities and FNEI with the necessary advanced high speed broadband services available to Canadians and other transmission companies in Ontario. While FNEI contemplated including fibre optic cable in the original concept of the project, it was not financially feasible to do so at that time as FNEI faced enormous challenges in completing the financing for the transmission line project. To bring the project in line with available funding, the engineering design was modified (the spans and height of the poles) which would not accommodate a fibre optics line on the poles. There would have to be a separate dedicated pole line for the telecommunications line in the future.

In 2002, the Mushkegowuk Council completed the Western James Bay Telecom Feasibility Study which recommended the use of a fibre optic backbone in FNEI's transmission system to service the needs of both FNEI and the communities. The Mushkegowuk Council applied to federal and provincial funding agencies, but their applications were not successful. Attempts at having Ontera and Bell Canada assist in funding were also unsuccessful. In November 2005, FNEI signed an OPGW Agreement with De Beers Canada to incorporate fibre optics in the sky wire (ground) wire of De Beers' new line between Moosonee and Kashechewan at a cost of approximately \$1.6 million to FNEI. To connect FNEI's substation in Attawapiskat to the system, FNEI contracted Valard Construction to install loose fibre optic line on a separate pole

FNEI Maintenance & Operations

By Mr. Vladimir Govorov

Update on Status of FNEI Operations:

Compared to the last few years, we had less power outages and reliable internet. And this is what our team is here for. Not everything can be controlled by our department, weather for example. Our system is still relying on the one line from Otter Rapids to Moosonee and this caused a few outages this year. The second line constructed by De Beers 4 years ago, is not in service yet due to the delays in asset transfer process from De Beers to Hydro One.

Operations department is continuing development and implementation of the necessary maintenance procedures for the equipment to provide system reliability. We apply principles of early diagnosis to identify signs of deterioration and resolve the issue before the equipment failure.

Most critical component in operations is qualified staff and FNEI puts a lot of effort providing good training for the electricians. In January, Robert Chookomoolin and Danail Yakimov went to Nashville for High Voltage equipment training and at the same time had a chance to get familiar with the local culture. (see picture at right) In March, they had two weeks training session as Substation Electricians at Mearie Group (Hydro One) in Orangeville.

In 2012, we had one student placement from Northern College, Joshua Wesley from Attawapiskat. He helped out in the office, worked at the substations, and transmission line maintenance with the Attawapiskat Power Corporation (APC) line crew.

See Josh working



This year, we've hired one more apprentice electrician to fulfill our needs in field staff, Devin Hookimaw. (See Picture of Devin below)

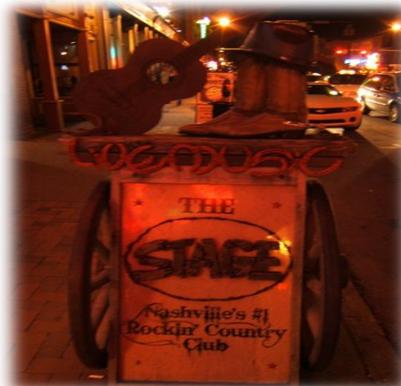


For the day by day, it is routine maintenance of the Substations, Transmission lines, and Fiber Optics.



Adding dry air in transformer

We had over 50 applicants for the position mostly from Ontario. Devin previously was working for APC as a Lineman apprentice, but decided to take a challenge to work with High Voltage Substation equipment at FNEI.



Fixing guy wire



Little helper (by Dany)

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Men at Work on Transmission Line. (Photo courtesy of FNEI)

PHOTO GALLERY 1 of FNEI SUBSTATIONS



Picture of the Attawapiskat FNEI Substation.
(Photo courtesy of FNEI)



Picture of the Fort Albany FNEI Substation.
(Photo courtesy of FNEI)



Picture of the Kashechewan FNEI Substation.
(Photo courtesy of FNEI)

LF- b C-4U- vL Pp-dL9-d v9-ds- P dN Pj-cs- dC-ds- d'dU-d eebf9-d L-dfD-ds- dC d VVt- dC-d e vP <PNaLdfr- dPp-dLr-d- Cld- fr dNfrfr- eeb- vS f-csCP- dS- dPsd-d- c- c- dfrs-d-.

dC-d eebf9-d L-dfD-d e P f-cs- dC-d VVt- c'v dC-ds- vP dJrbU- l'v vS -dC-d-d-e-s-d- v S b'PCLrfr- d'dU-d eebf9-d Pp-dLr-ds- dC-d Pp-dL9-d v9-ds- P <PNaU- v -dfr-CP- Pp-dL9-d v-c- d' dU-cJ-d v9-ds- b b'Pdr- b Pp-dL9fr- d'dU-s- v eebf-c-s-ds- vP -dfr- d <Nrlfr- dC-d b Pp-dLr-ds- vS f-cs-c-s-s- Nle-v dfrfr- v dJcfrfr- s-le-d C-4U- ds-d- J e d-drU P Jfr9Ue- dL b P d-cs- Pp-dL9-d v9-ds- c'c dC-ds- d'dU- eebf9-d L-dfD-d e v-b-s b d-U- v' vN-d' b s-le-d dPL-d-d' s-le- dC-b-d-d d'dU- dC-d dPp-dLr-d- P dfr-c-d- e eeb- dJcJ-d e c'c d-s-d-d-d- c'c dCPt- dC-d e vP dfrfr- vP dNfrfr- q dfr s-rJrbU- b dJcct- d CL9-d e q dfr eebf-c-s-d- d'dU- -dP-d- dfr-.

v-b-s vUrbU- fr-v d-v e dfr dC-ds- fr dNfrfr- q-be q dfr -dfr-dfr- q dfr lLfrfr- d'dU- -dP-d- q dJ-d-eLrfr- ds-d- b frN-s-9fr- d' d'dUf Lr-d-b-s-d- q' <PNaL-d-e-s- dC-ds- ds-s-d- eeb- d'd U-d dCfr-c-d e q dfr lLfrfr- d'dU- v -d'-9-s-bU- P-c-s- c'c v-b b Pst-vc-s-p b dfr <Pn- s-l- v P-c-c-d-e-s-d- c'c PzU-s-be d'P l'Jb- b dC-dr- c'c vS fr-c-l-9-s-bU- q dfr eebf-c-s-d- d'dU- b P JNrlb- q dfr-c- fr lLfrct- d'dU- q dC-dLdfr- c'v vS -dP-d-s-d- v <PNaLfr- -dfr-s-d- q dfr l'v J-c-s-s- d' d'dUf-d Lr-d-b-s-d-.

dL dJ9-d- P dS-d-c-s-d- c'c lJc-c-s-d- fr-v dU9 q-b- fr dfr-c-s- Pn-e- dC-d vS dfr-c-s-d- dJ- q-d- fr NlJrbU- dC-d eeb- b P dJrbU- dC-d b P dC-dr-cP- dJ9-d-s-s- P dfr-c-d- fr -dfr-dfr- fr r-v dC-ds- dC-d s-c- b P l'Pb- dJ9-d- d-s- Pst-l-c-s- c'c P dNc-d-bU- fr-c-d q dfr -dfr- dC-drfr- fr dC-d e q' -c- s-le- dC-b-d-d d'dU- eebf9-d dC-dr-d dPL- v-b-s v-U- s ebr-e- fr dN lJcct- dL c'c c-s- fr -dfr- dC-dr-lfr- dC-d dC-d e d-s- dL f-e q dN l'v- c'c s-b- dU9 v dS c-s-d- c-s- q lJULb- dJ9-d- c-s- b -dfr-dfr- vS 'c-v-sCP- dC-d e.



Lucie Edwards presenting a gift of mocassins to Chance Kakegamic of Kashechewan First Nation on Chance's science experiment, the only student who completed the experiment!
Way to go, Chance!!
(Photo courtesy of Gail Lawlor)



Fort Albany First Nation Children receiving an award for their calendar artwork from Gail Lawlor, standing in the back.
(Photo courtesy of Gail Lawlor)

PHOTO GALLERY 2



Kashechewan Children watching a demonstration of the glowing pickle that one of the Kashechewan students made as a science project!
Photo courtesy of the FNEI Conservation Project Team.



Meewun Metatawabin, Attawapiskat First Nation, peeks through the window after demonstration of shrink wrapping a window during the FNEI Conservation project team visit to Attawapiskat First Nation!
Photo courtesy of the FNEI Conservation Project Team.

PHOTO GALLERY 3



This picture was taken by FNEI on April 28, 2008, as part of the flood watch during breakup season. Photo courtesy of FNEI.



Construction Phase of the FNEI Substation in Kashechewan in November, 2006. Photo Courtesy of FNEI.

