Clean Energy BC's
OPERATIONS WORKSHOP

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Hyatt Regency, Vancouver
www.cleanenergybc.org
THE AUTOMATED COANDA SCREEN CLEANER KEEPS OPERATORS SAFE AND PRODUCTION MAXIMIZED

FOR PRESENTATION AT CLEAN ENERGY BC OPERATORS WORKSHOP

VANCOUVER, BRITISH COLUMBIA

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Background

- 27 MW Skookum Creek Power Project commissioned in Spring 2014
- Desperation was the mother of invention
- Led us to develop the Coanda Screen Cleaner
- Solved the only major downside associated with Coanda Screens
- Allows operator/owner to sleep at night
- Eliminate lost revenue, Safely
AGENDA

• When, Where and What drove the invention of the Coanda Cleaner

• Safety benefits

• Production and economic benefits

• Summary

• Contact information
SKOOKUM CREEK INTAKE

Coanda Screen

Skookum Creek
THE SKOOKUM CREEK STORY

- Commissioned in May 2014
- Coanda was designed for $12 \text{ m}^3/\text{s} = 120\%$ of design flow of $9.9 \text{ m}^3/\text{s}$
- Loss of production at $7.5 \text{ m}^3/\text{s}$
- Wild production swings related to Coanda plugging and unplugging
- Required round the clock hourly/continuous cleaning during storm cycles and increasing river flows
THE ROOT OF THE PROBLEM

• Material hanging up on the screen

• That small innocuous spec of dirt, fern root, peat, leaves, etc. causes “Lift Off”
MANUALLY CLEANING COANDA SCREENS
Wet Line after 2 passes

Wet Line before cleaning
First mechanized cleaner installed in July of 2014 after trialing many different ideas.

Automation followed by September 2014 in time for the fall rains.

Operator presence due to manual cleaning eliminated.

Two standard designs for large and small scale projects.

Installed on projects from 100 kW to 27 MW.
LOST WATER = LOST $
No lost water after only 12 cycles
Real-Life Example from Skookum HMI

MW Output Over Time Illustrating Impact of SSES Coanda Screen Cleaner

Production With Plugged Screen
Real-Life Example from Skookum HMI

MW Output Over Time Illustrating Impact of SSES Coanda Screen Cleaner

Immediate Production Increase After Enabling SSES Coanda Screen Cleaner

Production With Plugged Screen
Real-Life Example from Skookum HMI

Immediate Production Increase After Enabling SSES Coanda Screen Cleaner

Production With SSES Coanda Screen Cleaner Running

MW Output Over Time Illustrating Impact of SSES Coanda Screen Cleaner
DOES SCREEN SIZE MATTER?

• Coanda Screen Cleaner can be installed on any size coanda screen
STANDARD TURNKEY SUPPLY PACKAGES

• Two Standard designs
  • AC Drive
  • DC Drive

• Galvanized structural components

• PLC controls speed, frequency, passes per cycle

• Remote communication/control capability

• Economical for Large and Small facilities
SUCCESS LEADS SSES TO MARKET

- Working from our success and encouragement from other IPPs, SSES started actively marketing the Coanda Cleaning System

- 5 installations in British Columbia (4 large and one small)

- 2 installations in the UK (both small)
COANDA CLEANER INSTALLATIONS

Rumbling Bridge, UK (400 kW)

Trethewey Creek, BC (21 MW)
COANDA CLEANER INSTALLATIONS

Haa-ak-suuk Creek, BC (6 MW)

Llangower, Wales (100 kW)
COANDA CLEANER INSTALLATIONS

Skookum Creek, BC (27 MW)

Brandywine Creek, BC (7.8 MW)
Conclusion

With an SSES Coanda Cleaner:

• No one required on screen for cleaning
• Safely clean under any river conditions, day or night
• Operate remotely
• Eliminate driving to Intake sites
• Payback typically under 2 years; or 1 major storm event
• Sleep at night, and make money while you do, Safely
WHO SHOULD YOU CONTACT?

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