

# Induced Draft ACC

Presented by ENEXIO, SPX Dry Cooling and Evapco-BLCT



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# ACC Users Group



## Axial Fan Wind Turning Vane Scale Model Test Results

Prepared for ACCUG Conference  
September 22-25, 2014  
San Diego, California  
By Martin J. Cuerdon P.E.



4th Annual Meeting  
September 24-26, 2012  
Gillette, Wyoming

## Wind Effects on ACC's

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ACC Users Group  
San Francisco, CA

## WINDSCREEN STUDY

## The Potential Influence that Crosswinds have on ACC Performance

A Computational Fluid Dynamics Approach

SEP 28-29, 2010  
ACC Users Group  
Pueblo, CO

Brent Gregory  
(brent.gregory@cpsusainc.net)  
www.cpsusainc.net

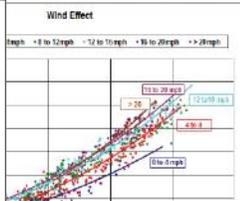
Air Cooled Condensers –  
SPX  
GLOBAL INFRASTRUCTURE

## Effect of Wind on ACCs



ACC Users' Group  
Las Vegas, NV  
November 6, 2009

Kent D. Zammit  
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kezammit@epri.com

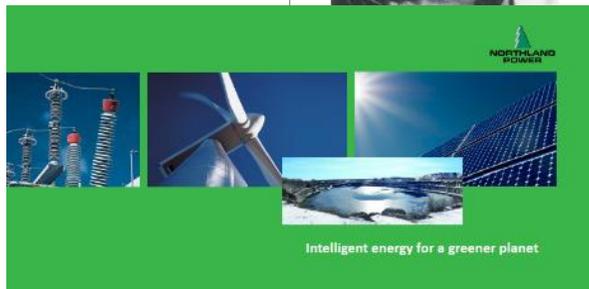


John S. Maulbetsch & Michael N. DiFilippo

2014 ACCUG I  
San Diego, CA



boxes:  
ence in the  
aintenance  
boxes.



## NORTH BATTLEFORD ENERGY CENTRE

Air Cooled Condenser Maintenance and Vibration Issues and Solutions

## Wind Effects on ACC's



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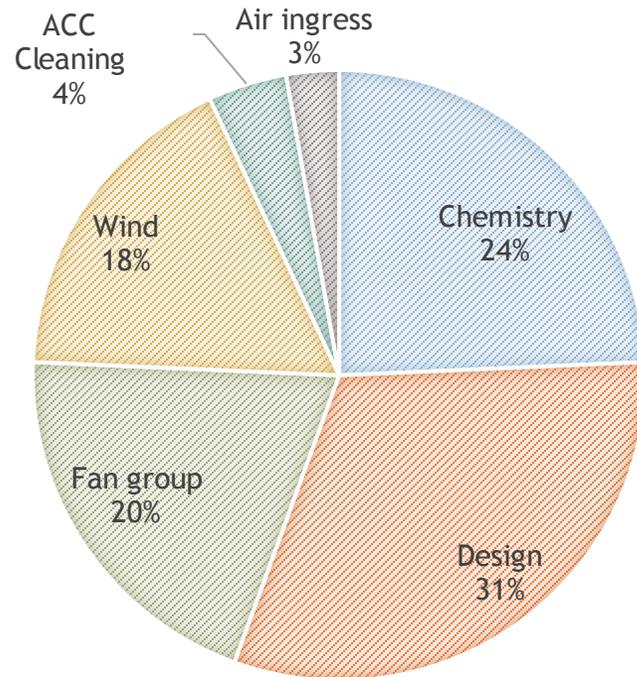
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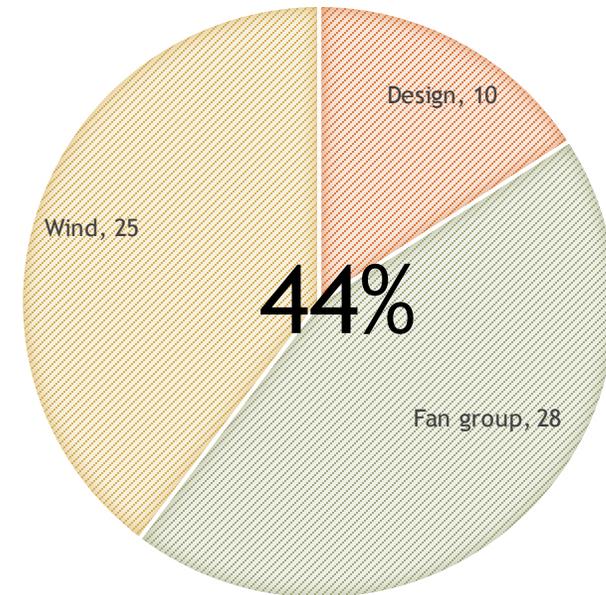
# ACC Users Group

<u>Category</u>	<u>Qty.</u>
Chemistry	35
Design	45
Fan group	29
Wind	25
ACC Cleaning	6
Air ingress	4
Total	144

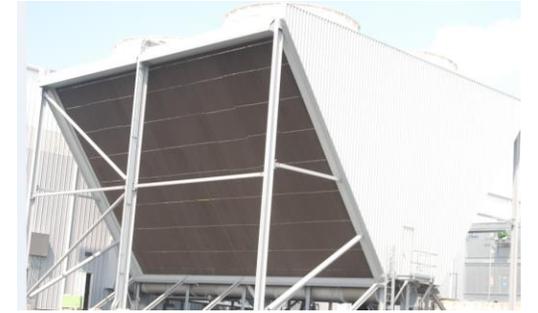
PRESENTATION TOPICS



MITIGATED BY INDUCED DRAFT

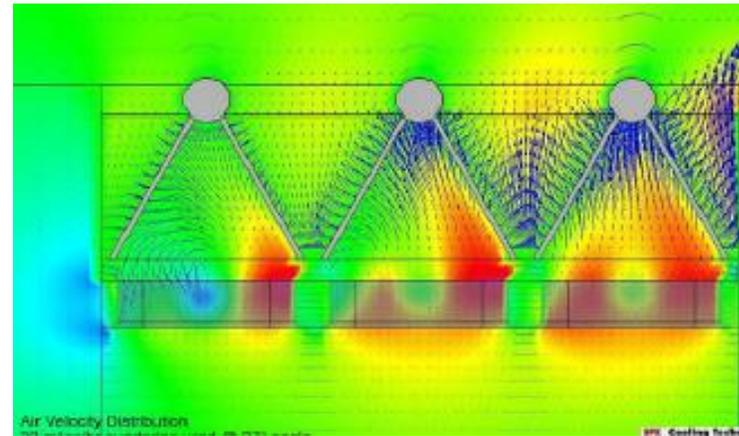
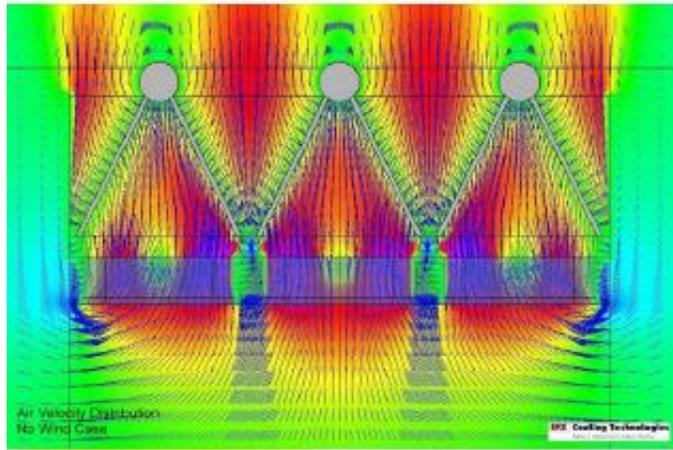


# A New Concept?



# Wind influence

- Wind can blow across the ACC causing misdistribution of air through the bundles



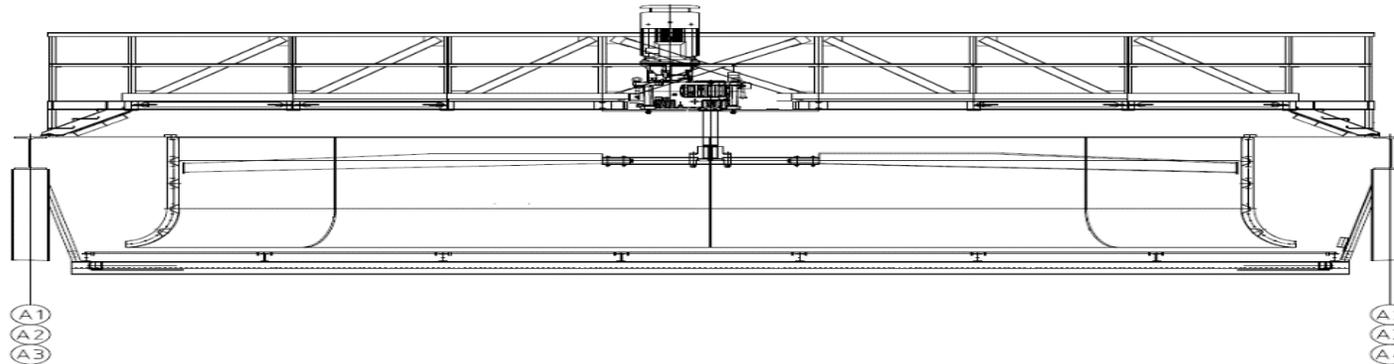
[ACCUG 2013 - Solving ACC Axial Fan Wind Related Problems \(Advanced Analytical Solutions, LLC\)](#)

- Result: More uniform air distribution across fan group in Induced Draft ACC's due to the bundles diffusing the air
- Induced Draft design reduces vibration resulting from windy conditions and mitigates undue stress to motor and gearbox



# Vibration & Loading

- Risk of fan bridge vibration can be minimized by dynamic calculation and design but never 100% eliminated
- Induced Draft design does not require a fan bridge (various designs)



# Recirculation

- Hot Air Recirculation
  - Increase in air inlet temperature = decrease in plant performance
  - With induced draft, exit air velocity is increased
- ACC Users Group

[ACCUG 2009 - Wind Effects on ACC \(EPRI\)](#)

[ACCUG 2010 - The Potential influence that crosswinds have on ACC Performance \(Creative Power Solutions\)](#)



# Constructability

- Construction and Erection: ~50% of an ACC turnkey offering
- Massive reduction in steel
- Improved constructability, reduction in total man-hours
- Lower overall height
- Reduced number of shipments
- Safer with greater productivity, larger percentage of erection performed at grade



# Induced Draft ACC



ENEXIO InAIR<sup>ACC</sup>



W-Style ACC<sup>®</sup>



ADVANCED  
TECHNOLOGY  
ACC

