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# NETCO-SNAP-IN® Rack Inserts: Current Projects Update

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NRC Meeting on Spent Fuel Pool  
Absorbers

*Matt Eyre  
March 14 2013*

# Outline

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- Purpose of SNAP-IN<sup>®</sup>
- Status of Projects
- Lessons Learned
- New Tools and Facilities
- SNAP-IN<sup>®</sup> Materials
- Project Licensing Experience



# What are NETCO-SNAP-IN® Inserts?

Replace Lost  
Reactivity Hold-  
Down



Made of Al/B<sub>4</sub>C  
Composite  
Material

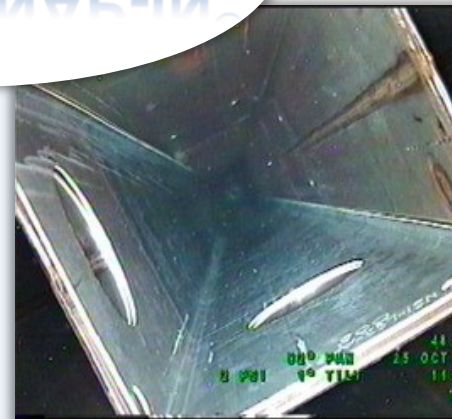


**NETCO-SNAP-IN®**

Extend Useful  
Storage Rack Life



Minimal Impact  
on Fuel Move  
Operations





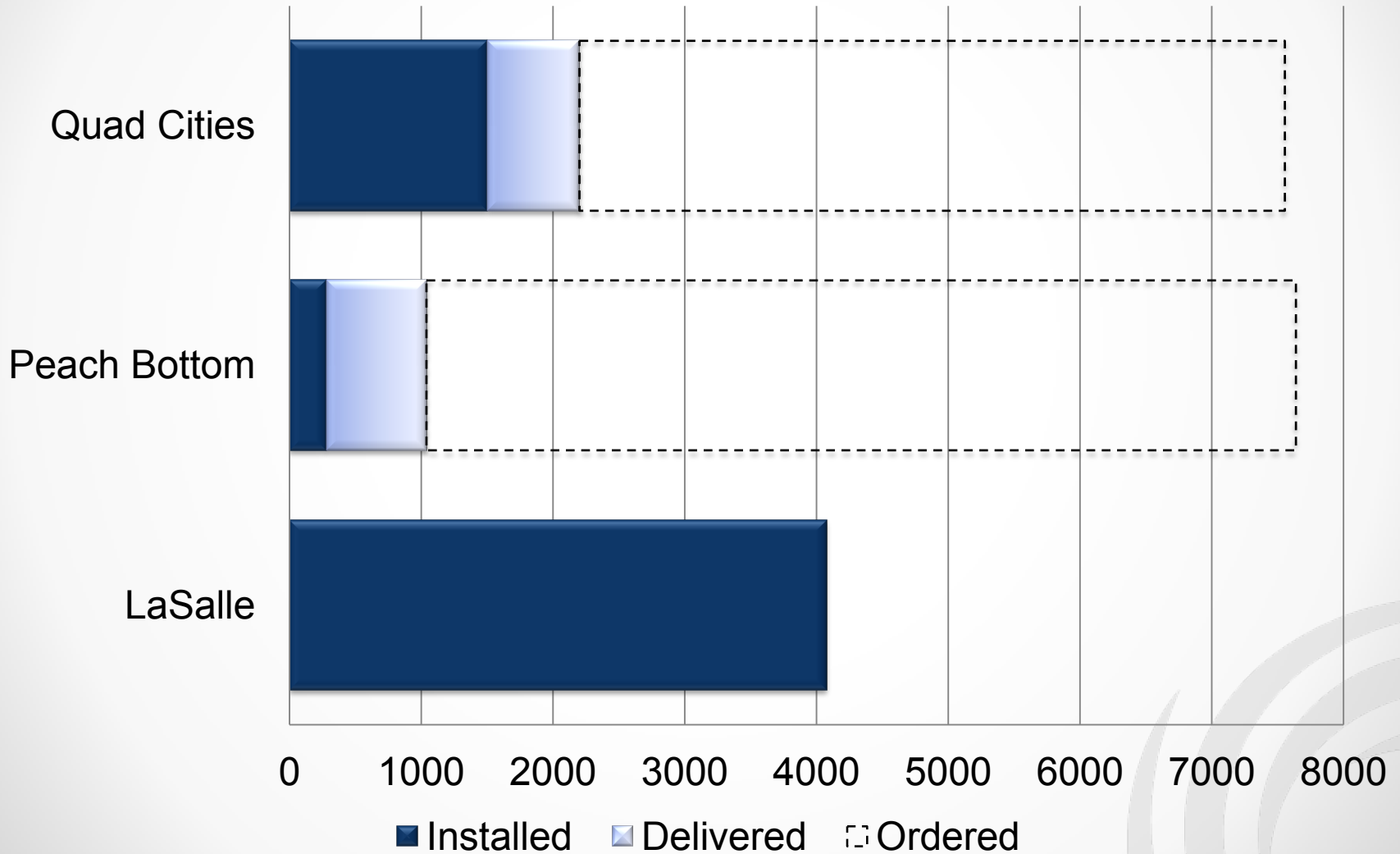
Exelon has adopted NETCO-SNAP-IN<sup>®</sup> Inserts as a Permanent Mitigation Measure for Degraded Boraflex. Other Utilities with Boraflex plants have expressed interest.

NRC Granted LaSalle County Nuclear Station Amendments 186 and 199 for use of the NETCO- SNAP-IN<sup>®</sup> Inserts in 2011. LaSalle is No Longer Reliant on Boraflex.

Projects Currently in Deployment at Quad Cities and Peach Bottom with Additional Projects Proposed.

Currently, Over 19,000 SNAP-INS<sup>®</sup> in 5 Spent Fuel Pools are Planned to be In Service by the End of 2016

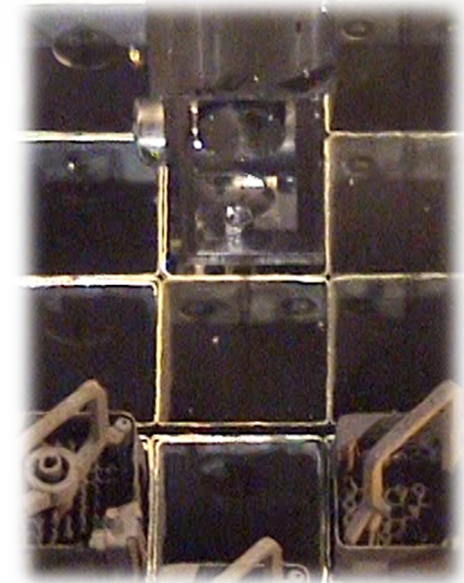
# Current NETCO-SNAP-IN® Projects



# LaSalle Station

## Installation Complete as of Dec 2011

- LAR Approval was Granted 1/28/2011
- 4073 SNAP-INS<sup>®</sup> Installed in Less Than 1 Year
- Installation Rate Averaged About 20 SNAP-INS<sup>®</sup> per Day
- No Major Issues During Installation
- LaSalle Presented the NETCO-SNAP-IN<sup>®</sup> Solution as a Contender for the Top Industry Practice (TIP) Award
  - “The Inserts are currently the most feasible and economic solution to Boraflex degradation available.”



# Peach Bottom

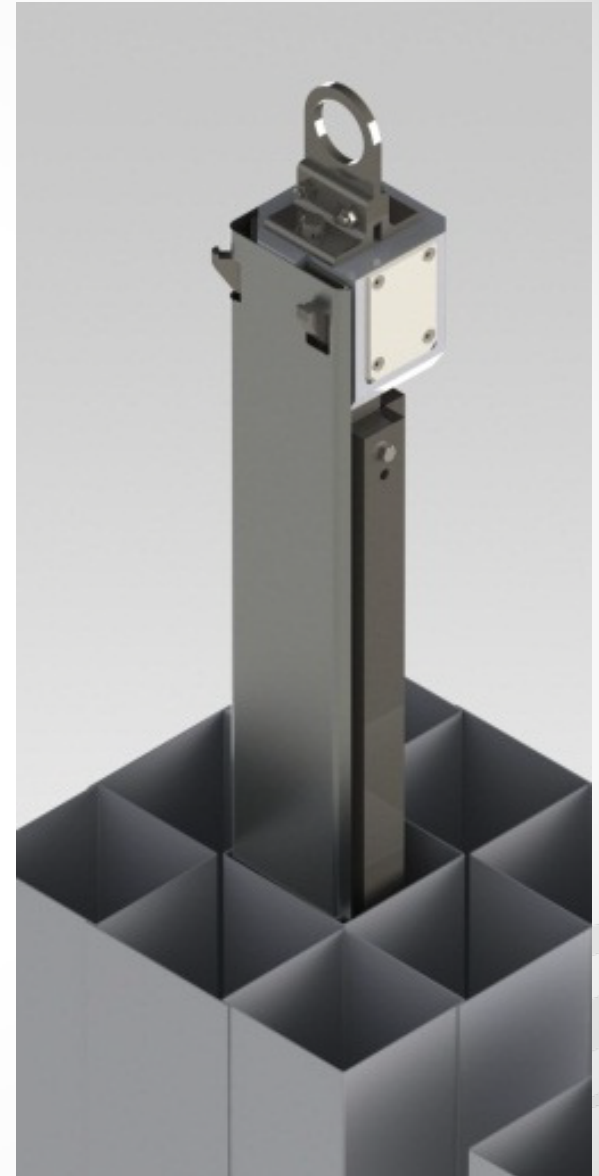
## Units 2 & 3, 7638 SNAP-INS®

- Submitted LAR Nov. 3<sup>rd</sup>, 2011
- Significant Modifications to Installation Tooling
  - Manual Release Mechanism Added
- SNAP-INS® Currently Being Manufactured
  - 759 Delivered
  - 2880 Scheduled to be Delivered Through 2013
- First Application of Removal Tool



# Removal Tool

- Designed to Allow for Removal of SNAP-INS® if Necessary
- Removal to Support Surveillance Program
  - Frequency and Location to be Determined by Service History

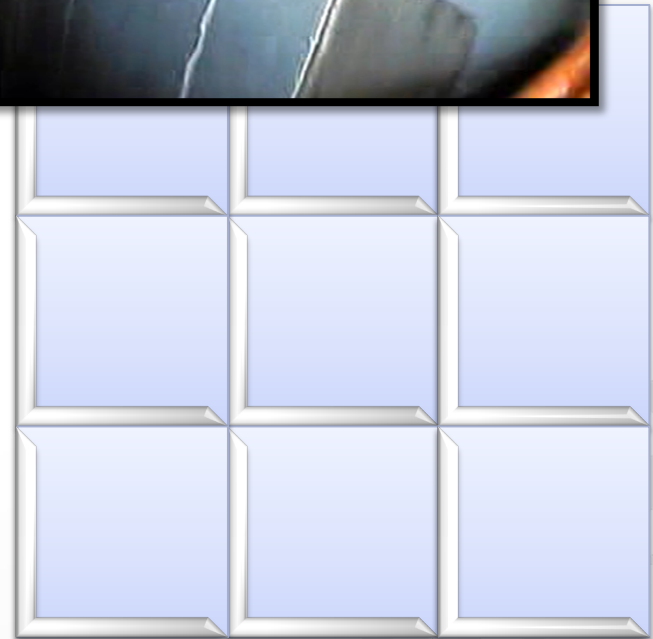




# Quad Cities

## Units 1 & 2, 7554 SNAP-INS®

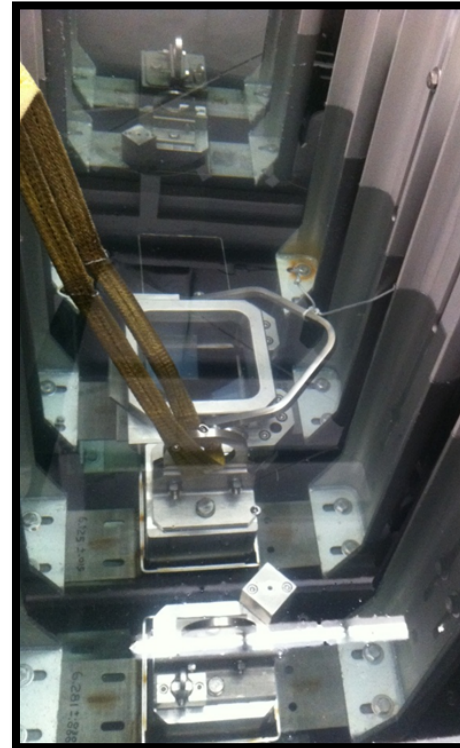
- Submitting LAR in 2014
- Installing Inserts in Advance of LAR Submittal
- Accelerating Project Plan to Have Installation Complete in 2014
  - 2200 Delivered by End of 2012
  - 2880 To be Delivered in 2013
- Approximately 2000 Installed To Date
  - Peak Installation Rate of About 100/day



# Manufacturing, Installation & Licensing Experience

## Manufacturing & Installation Issues

- Peach Bottom Racks (Westinghouse Design) Provided a Challenge Due to Variation in As-Manufactured Dimensions
- Quad Cities Rack Conditions Required Last Minute Changes to Their SNAP-IN<sup>®</sup> Design
- Rack Inspection Tool has been Developed to Better Characterize SNAP-IN<sup>®</sup> Design Requirements
- Added New Test Facility in Danbury, CT



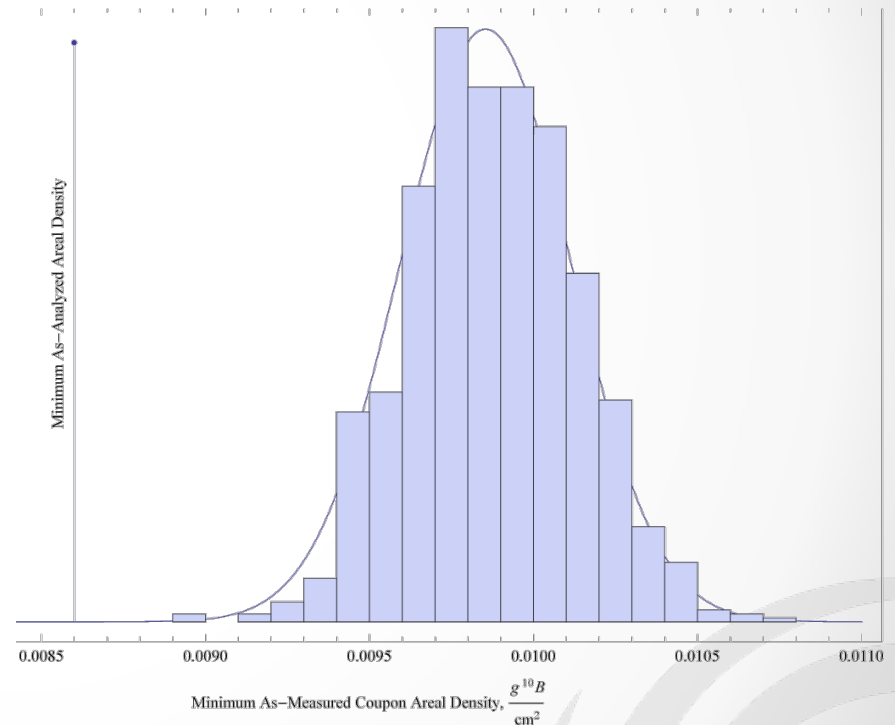


Clean Test Facilities at  
Scientech's Danbury, CT  
Site Allow for More Flexible  
Test Conditions

**CAUTION**  
A person will be struck  
by the object.  
Do not touch.

# Rio-Tinto Alcan W1100N (aka BORALCAN) Series Material Performance

- Surveillance Test Results Show Consistency with Material Qualification Tests
- Material Produced So Far:
  - Loadings from 16-23 vol-% B<sub>4</sub>C
  - SNAP-IN<sup>®</sup> thickness from 0.065” to 0.125”
  - Bend radius down to 0.25”
  - Areal Density Values from 8.6 to 25 mg B10/cm<sup>2</sup>



# Qualified Second Material Supplier

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## MAXUS Aluminum Core Technology from Nippon Light Metal

- Accelerated Corrosion Test Program Completed Early 2012
- Audit Performed to Add ACT/Nippon Light Metal as a Qualified Insert Supplier
- 5000 Series Aluminum Cladding Provides Additional Wear Resistance
- Demonstration Installations Successfully Performed at Danbury Test Facility

# Manufacturing, Installation & Licensing Experience

## Licensing Issues

- Interim Credit for Boraflex During Insert Installation Continues to be a Difficult Issue
- Majority of RAI's Issued are With Regard to Interim Credit
- Some RAI Questions Regarding Coupon Program and Seismic Qualification





Questions?