“Building To Standard Is Not An Option”
Agenda

- **Introduction & Background**
  - Who am I and why am I here?

- **Description of Exelon Governance Structure**
  - PHI Service Territories

- **Current Exelon Quality Initiatives**
  - Pepco OH Distribution Quality Pilot
  - EU-wide Quality Initiative

- **“Building to Standard is **NOT** an Option”**
  - Field examples & Case Studies

- **West Penn Power Incident Review**

- **Questions**
  - Closing remarks.
Who am I and why am I here?

Joseph Morris

- Sr. QA & Control Specialist (Pepco Holdings, Inc.)
- 23 + yrs. Field Construction, Operations, Project Management Quality & Safety Experience
- 12 + yrs. Utility QA Experience
  - 10yrs – PECO
  - 2 + yrs. – PHI Sr. QA & Control Specialist
- Project Management Degree

Make you aware of;
- Current Exelon & Industry QA/QC Landscape
- QA/QC 2019 & Beyond
Exelon Governance Structure (Related to Contracting - COC’s)

- Exelon Utilities (EU)
  - BGE
  - ComEd
  - PECO
  - Pepco Holdings, Inc. (PHI)
    - Atlantic City Electric (ACE)
    - Delmarva Power & Light (DPL)
    - Pepco
Pepco OH Distribution Quality Pilot

- The Bar Tech Group (3rd party quality inspections)
- 1 Business Analyst, 3-4 field inspectors
- On Pepco footprint for 7 months (inspection data next slide)
- Approval to expand to ACE & DPL
- Approval to expand to other disciplines of work

EU-wide Quality Initiative

- Quality tool recommendations
- Define EU common quality checklist for standard inspections
- Identify a baseline process and methodology for the Quality Management Organization
## QC Performance Summary

<table>
<thead>
<tr>
<th>Month</th>
<th>Items Deviated</th>
<th>Items Inspected</th>
<th>Deviation Rate Based on Items</th>
<th>Locations Deviated</th>
<th>Locations Inspected</th>
<th>Deviation Rate Based on Locations</th>
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</thead>
<tbody>
<tr>
<td>August</td>
<td>451</td>
<td>4295</td>
<td>10.50%</td>
<td>204</td>
<td>305</td>
<td>66.89%</td>
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<tr>
<td>September</td>
<td>520</td>
<td>4729</td>
<td>11.00%</td>
<td>251</td>
<td>423</td>
<td>59.34%</td>
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<tr>
<td>October</td>
<td>431</td>
<td>4406</td>
<td>9.78%</td>
<td>242</td>
<td>460</td>
<td>52.61%</td>
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<tr>
<td>November</td>
<td>412</td>
<td>3004</td>
<td>13.72%</td>
<td>152</td>
<td>201</td>
<td>75.62%</td>
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<tr>
<td>December</td>
<td>341</td>
<td>3163</td>
<td>10.78%</td>
<td>150</td>
<td>266</td>
<td>56.39%</td>
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<tr>
<td>January</td>
<td>215</td>
<td>2591</td>
<td>8.30%</td>
<td>97</td>
<td>255</td>
<td>38.04%</td>
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<tr>
<td>Totals:</td>
<td>2370</td>
<td>22188</td>
<td>10.68%</td>
<td>1096</td>
<td>1910</td>
<td>57.38%</td>
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</table>

Pepco OH Distribution Quality Pilot

An Exelon Company
## Pepco OH Distribution Quality Pilot

(People Led – Contractor (COC) Self-Reporting)

<table>
<thead>
<tr>
<th>QA Inspections</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>YTD</th>
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</thead>
<tbody>
<tr>
<td>Total Jobs</td>
<td>133</td>
<td>130</td>
<td>139</td>
<td>145</td>
<td>132</td>
<td>110</td>
<td>98</td>
<td>90</td>
<td>105</td>
<td>96</td>
<td>89</td>
<td>82</td>
<td>1349</td>
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<tr>
<td>Total Bid Jobs (P2P)</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>44</td>
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<tr>
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<td>36</td>
<td>29</td>
<td>43</td>
<td>45</td>
<td>56</td>
<td>50</td>
<td>106</td>
<td>111</td>
<td>133</td>
<td>98</td>
<td>96</td>
<td>52</td>
<td>855</td>
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<tr>
<td>Total Bid Job Inspections</td>
<td>25</td>
<td>29</td>
<td>21</td>
<td>22</td>
<td>21</td>
<td>1</td>
<td>0</td>
<td>16</td>
<td>41</td>
<td>32</td>
<td>56</td>
<td>30</td>
<td>294</td>
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<tr>
<td>Total Unsat Inspections</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<tr>
<td>Total Observation points</td>
<td>275</td>
<td>336</td>
<td>323</td>
<td>379</td>
<td>391</td>
<td>541</td>
<td>6890</td>
<td>9851</td>
<td>2298</td>
<td>1456</td>
<td>1006</td>
<td>513</td>
<td>24259</td>
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<tr>
<td>Total Unsat Observation points</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>8</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>%Inspected (Total)</td>
<td>27.1%</td>
<td>22.3%</td>
<td>30.9%</td>
<td>31.0%</td>
<td>42.4%</td>
<td>45.5%</td>
<td>108.2%</td>
<td>123.3%</td>
<td>126.7%</td>
<td>102.1%</td>
<td>107.9%</td>
<td>63.4%</td>
<td>63.4%</td>
</tr>
<tr>
<td>%Inspected (Bid Jobs)</td>
<td>625.0%</td>
<td>725.0%</td>
<td>350.0%</td>
<td>314.3%</td>
<td>262.5%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1600.0%</td>
<td>1366.7%</td>
<td>800.0%</td>
<td>1866.7%</td>
<td>1000.0%</td>
<td>668.2%</td>
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<tr>
<td>Minimum %Inspected</td>
<td>10.0%</td>
<td>10.0%</td>
<td>10.0%</td>
<td>10.0%</td>
<td>10.0%</td>
<td>10.0%</td>
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<td>10.0%</td>
<td>10.0%</td>
<td>10.0%</td>
<td>10.0%</td>
</tr>
</tbody>
</table>

Quality Pilot – 2370 / 22188 = 10.68% Deviation Rate (6 month sample size)

COC – Self-reporting 16 / 24259 = 0.07% Deviation Rate (YTD sample size)
“Building to Standard is NOT an Option”

- Pole installed was 45 foot
- Installed per WO
- Standards call for a 50 foot pole with a transformer on it (not shown).

Engineering Deviation
ON SLOPES, SETTING DEPTH SHOULD BE REFERENCED TO LOWEST POINT ON THE GRADE WITHIN 2' FROM POLE. NORMAL = 10% OF LENGTH + 2'. SEE TABLE 2 AND NOTE 3 IN PAGE 2.
“Building to Standard is NOT an Option”

- No stirrups installed
- Required by Std. 0595
- Not in Stock

Supply Deviation
Standard # 0595
“Building To Standard Is Not An Option”

Case Studies

- “Quality is not simply a theoretical idea about how to cut costs and make better products and services. Quality is about anticipating the consequences of errors, carelessness, and inefficiency, and putting processes in place to ensure they don’t occur.”

- The value of paying attention to the details of your quality processes contained in your Quality Management System (QMS) are paramount as you will see in the following examples;
“Building to Standard is NOT an Option”
Florida International University bridge Collapse - 2018

- “Designers overestimated the strength of a critical section of a Florida International University pedestrian bridge & underestimated the load on that same section.”

- “The investigation continues to examine the design, review, construction processes as well as the actions taken once the cracking was observed.”

Peer Check
Corrective Action

Peer Check
Corrective Action
“Building to Standard is NOT an Option”

Boston “Big dig” - 2006

- “The use of epoxy anchor adhesive with poor creep resistance was the cause of a fatal roof collapse in a tunnel in Boston’s Big Dig on July 10, 2006.”

- Oct 29, 2015 report: "heavy corrosion on concrete joints, missing cover plates and icicles hanging over interstate highways.”
“Building to Standard is NOT an Option”

Millennium Tower San Francisco - 2009

- Completed ten years ago, the tower so far has sunk 16 inches

- “shows no immediate sign of stopping.”

- Exchanges between the Department of Building Inspection and Millennium Partners, the developer, show both sides knew the building was sinking more than expected before it opened in late 2009, but neither made that information public.

Pre-Construction Soils Analysis & Testing
“Building to Standard is NOT an Option”

Deepwater Horizon Oil Rig Explosion - 2010

- “Culture of Quality was subordinated to cost-cutting and procedural shortcuts to try and get the drilling project, which was five weeks behind schedule, back on track.”

- Replacing a mixture of heavy mud with a lighter, cheaper, and less effective mud to provide protection against blowouts because of cost overruns.

- Testing the cement used in the casing would have taken 10 hours of time and cost $128,000.

- Current cost projections of catastrophe > $60 Billion (BP)
Seven crew members died, a $3 billion-dollar orbital vehicle was lost, and NASA’s Space Shuttle program was suspended for 32 months.

The official cause of the disaster was the failure of an O-ring to prevent hot gases from leaking through the joint in the solid rocket motor during launch.

The O-ring design had been a point of concern for several years prior to the disaster, but it had been either poorly communicated or ignored in favor of maintaining project delivery on-time and on-budget.
“Quality needs to live in every part of an organization, from the C-suite to the shop floor and the field. Quality also spans the entire industry of which each organization is a part. However, “Quality” can’t simply become a mantra that organizations speak about in loose terms and assume will become a philosophy that subconsciously permeates each worker and magically produces results. Quality must be praxis, not lip-service to vague ideals, especially when the consequences of getting it wrong can be so high.”
We should all be empowered to stop unsafe work & report any unsafe conditions!!
“Building to Standard is NOT an Option” — Field Safety Issues

We should all be empowered to stop unsafe work & report any unsafe conditions!!
West Penn Power Incident Review

- Carrie Goretzka, 39, was killed on June 2, 2009 when she went outside her home to retrieve her cell phone from her car to call 911 after she saw a backyard tree burning because the line had again overheated, cutting power to her house. The energized line fell on her, killing her. It was a clear day.
West Penn Power Incident Review

- West Penn Power was found negligent for failing to have its employees use a wire brush and allowing its employees to use knives or pliers to clean conductors when installing splices on its lines.

- West Penn settles fatal power line case for $105M

- Hastings Conductor Cleaning Brush, $35.91
Her two daughters now 12 & 14 years old!
Questions ??

Thank You !!