TPU SAFETY PROGRAM UPDATE

SAFETY FIRST

Public Utility Board Study Session
October 10, 2018
John Lawrence
Jim Boyd
TPU IS COMMITTED TO SAFETY EXCELLENCE

• Top management is **visibly** committed
• Middle management is **actively** involved
• Front-Line supervision is **performance**-focused
• Employees are actively **participating**
• System is **flexible** to accommodate culture
• Safety system is **positively perceived** by workforce
TPU SAFETY FOCUS

Key Objectives

- Key Performance Indicators
- National Safety Council
- Caterpillar Safety Services
- Organizational Structure
- 19/20 Safety Budget
- Injured Worker Prevention Programs
# TPU SAFETY METRICS

## Performance Metrics Report
### Quarter 2, 2018

### Tacoma Public Utilities

<table>
<thead>
<tr>
<th>Financial Performance:</th>
<th>Power</th>
<th>Water</th>
<th>Rail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Debt Service Coverage</td>
<td>Green</td>
<td>Green</td>
<td>N/A</td>
</tr>
<tr>
<td>2 Liquidity - Days Cash on Hand</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>3 Budget Performance</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operational Excellence:</th>
<th>Power</th>
<th>Water</th>
<th>Rail</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Residential Bill Comparison</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>5 O&amp;M Cost per Customer</td>
<td>Yellow</td>
<td>Yellow</td>
<td>Green</td>
</tr>
<tr>
<td>6 Outage Duration</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>7 Outage Frequency</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>8 Non-Carbon Power Resources</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>9 Power Conservation</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Commitment to Cust &amp; Employees:</th>
<th>Power</th>
<th>Water</th>
<th>Rail</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Customer Satisfaction</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>11 Employee Satisfaction</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>12 Employee Safety</td>
<td>Red</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>13 Call Center Responsiveness</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
</tbody>
</table>

### Notes:
- **Green**: Meets or exceeds target.
- **Yellow**: Partially meets target.
- **Red**: Does not meet target.
- **TBD**: Target has not been determined.
TPU’S NEW LEADING SAFETY PERFORMANCE INDICATORS

• Senior Leadership Performing Crew Site Visits and Observations
  ▪ Definition of “senior leadership” = Workgroup Manager / Division Manager level or higher including Chief Officers
  ▪ Definition of “senior leadership performing work observations” = Documented field audit of safe & unsafe processes, equipment, and practices which can include work process review, employee interviews, written program review, JHA review, and field observations.
  ▪ Number of observations performed/documented by quarter (gross number of observations & ratio of observations per 100 EE)

• Corrective Actions
  ▪ Definition of “timely implementation of corrective actions” = All hazards identified through any method including but not limited to regular worksite inspections, field observation programs, ergonomic assessments, injury or vehicular incident review, good catch or near miss reporting shall be reviewed to develop strategies and corrective actions for abatement which are intended to be completed within a 90-day timeframe.

• Good Catch / Near Miss
  ▪ Definition of “GC/NM” = An unintended, unplanned, or unexpected event that could have, but did not result in personal injury or property damage.
  ▪ Number of GC/NM reported by quarter (gross number reported & ratio of GC/NM per 100 EE)
Extensive background and experience in Safety Process Management systems

Provides comprehensive solutions to developing and implementing program components
  ✓ Plans, Policies and Programs

Provide training to Safety Staff assuring common safety practices and understanding across the utility
Initial Engagement

Engaged Our Employees
Communicated The Results
Got Commitment From Leaders AT All Levels
Next Engagement

- Would like to leverage Caterpillar to implement recommendations & next steps
- Are initially focusing on employees with the greatest exposure to hazards
- Intend to train all supervisors & managers responsible for employees with greatest exposure to hazards
- Will implement Train The Trainer Programs for long term sustainability
CATERPILLAR SAFETY SERVICES

Scope of Work

- **Safety Culture Training**
  - **Supervisor Training in Accountability & Recognition Techniques S.T.A.R.T.** (approx. 70 TPU Supervisors & Managers)
    - Provide managers and supervisors the skills to affect safety perceptions and behaviors throughout organization. Why accountability works’ how incidents impact the bottom line & leadership’s role in improving culture
  - **Safety Excellence Workshops** (approx. 670 employees)
    - Designed to equip participants with key insights, strategies and tools necessary to enable strong safety performance
    - Integrating safety management into the daily operation of the business at all levels
    - Establishing a positive safety culture built upon catching employees doing things right
    - Building trust, improving management credibility, and strengthening communications
  - **Speak up/Listen up training**
    - Designed to help employees learn how to give safety-related feedback to co-workers. Improve workplace safety by learning simple, easy-to-use feedback techniques.
- **Provide Safety Steering Committee training & on-going consultation**
  - Using the assessment findings produced from the TPU Safety Perception Survey begin building a plan that identifies priorities, resources, specific actions to address opportunities to strengthen TPU’s Safety Culture
- **Provide Train the Trainer training**

- **Rapid Improvement Workshops**
  - Engage front-line employees in developing high quality, measureable accountability systems that integrate safety activities into everyday processes
Scope of Work

- **On/off site consultation**
  - Employee Communications & Messaging
  - Strengthen TPU’s Safety Culture
  - Safety Training Development
  - Process Improvement
  - Accountability & Recognition
  - Safety Excellence

- **Capital Intellect**
  - Establish internal expertise for long term sustainability
  - Acquire Caterpillar training tools & materials
  - Develop 30 trainers across TPU

- **Contract Costs**
  - $397,678.00
  - Initial focus 670 employees
  - Price per employee $593.55
TPU’S SAFETY STRATEGY ROADMAP

2018

2019

2020

Caterpillar Safety Perception Survey

Employee Safety Interviews

PUB Update

Culture Baseline est.

“START” Training

Caterpillar Safety Perception Survey

Survey

Safety Org/Reporting

Establish PDFs/Recruitment

Train the Trainer

Safety Culture Excellent Workshops

Train the Trainer

Safety Excellence Training (Existing/New Hires)

“START” Training (Existing/New Hires)

Train the Trainer

Speak/Listen Up Training

Train the Trainer

Speak/Listen Up Training (Existing/New Hires)

TPU Safety CI Steering Committee

Cl Team 1

Cl Team 2

Train the Trainer

Cl Team 3

Cl Team 4

Cl Team 1

Cl Team 2

Train the Trainer

Cl Team 3

Cl Team 4

TPU Safety CI Steering Committee

Cl Team 1

Cl Team 2

Train the Trainer

Cl Team 3

Cl Team 4

Safety Goals & EDPRs

Injury Prevention Programs

Employee Communications

Plan Safety Budget

Safety Org/Reporting

Implement Key Performance Indicators

TPU Safety Manual

Develop Safety Management System

Policies

Programs

Procedures

Standards

Segment 1

Segment 2

Segment 3

Segment 4

Safety Professional Certification Training

Cl Team 1

Cl Team 2

Train the Trainer

Cl Team 3

Cl Team 4

Develop Safety Management System

Policies

Programs

Procedures

Standards

Segment 1

Segment 2

Segment 3

Segment 4

Safety Professional Certification Training

Cl Team 1

Cl Team 2

Train the Trainer

Cl Team 3

Cl Team 4

Develop Safety Management System

Policies

Programs

Procedures

Standards

Segment 1

Segment 2

Segment 3

Segment 4

Safety Professional Certification Training

Cl Team 1

Cl Team 2

Train the Trainer

Cl Team 3

Cl Team 4

Develop Safety Management System

Policies

Programs

Procedures

Standards

Segment 1

Segment 2

Segment 3

Segment 4

Safety Professional Certification Training

Cl Team 1

Cl Team 2

Train the Trainer

Cl Team 3

Cl Team 4

Develop Safety Management System

Policies

Programs

Procedures

Standards

Segment 1

Segment 2

Segment 3

Segment 4

Safety Professional Certification Training

Cl Team 1

Cl Team 2

Train the Trainer

Cl Team 3

Cl Team 4

Develop Safety Management System

Policies

Programs

Procedures

Standards

Segment 1

Segment 2

Segment 3

Segment 4
SAFETY ORGANIZATIONAL STRUCTURE & BUDGET

- **Safety Workshop**
  - Executive Leadership Across City of Tacoma
    - Safety Excellence
    - Identify gaps & opportunities
    - Recommend organizational structure

- **TPU 19/20 Budget**
  - New FTEs
  - Professional Services
    - Caterpillar Safety Services
    - National Safety Council
EXPLORING INJURY PREVENTION & WORKER CARE PROGRAMS

- Develop and implement programs that will educate employees on soft tissue injury prevention as well as provide stretching and pre-work warm up routines

- Develop and implement programs to provide initial support to injured workers to assist in evaluating the injury and treatment path moving forward
NEXT STEPS

• Utility Board Approval for Caterpillar Safety Services
• Implement TPU KPIs
• Finalize Organizational Structure and Staffing Plan
• Recruit and hire for Safety Support Staff Positions
• Continue Joint Labor Engagement
• Continue Employee Communications Updates
Legislative Policies
October 10, 2018

• Clark Mather, Community and Government Relations Manager
Overview

• Review edits seeking to incorporate PUB feedback to the City of Tacoma’s Legislative Policies Statement

• Feedback due to General Government staff on October 11

• City Council scheduled to adopt resolution on October 16
Incorporating PUB feedback

• Page 25 – Defining sustainability
  o “Sustainability is a balance between equity, the environment, and the economy.”
Incorporating PUB feedback

• Page 57 – Protecting City of Tacoma’s telecommunications authority
  o “The City supports policies that allow current telecommunications operations and the flexibility to provide emerging services. The City opposes any restriction of its authority to operate a telecommunications utility.”
Incorporating PUB feedback

- Page 61 – Telecommunications section update
  - Voice over Internet Protocol (“VoIP”) and IPTV are two examples of services that should be treated just like their equivalents, traditional cable and telephone services.
Incorporating PUB feedback

• **Page 61 – Net neutrality**
  • The City supports policies that promote net neutrality, open internet access, and customer privacy for all citizens of the United States.
What’s Ahead…

Tacoma City Council scheduled to adopt resolution/Legislative Policy Statement
• Tuesday, October 16, 2018

2018 General Election
• Washington General Election – Tuesday, November 6, 2018

TPU’s legislative policies before the PUB
• Wednesday, December 12, 2018

2019 Legislative Session
• 2019 Legislative Session: Monday, January 14, 2019
  » Long Session, lasting for 105 calendar days

116th Congress
• Convenes Thursday, January 3, 2019
CYBERSECURITY UPDATE

UTILITY TECHNOLOGY SERVICES
TYLER SWARTZ, TERRY GIFFORD
OCTOBER 10, 2018
“Most people are starting to realize that there are only two different types of companies in the world: those that have been breached and know it and those that have been breached and don’t know it. Therefore, prevention alone is not sufficient...”

Ted Schlein, Security Expert
## Cybersecurity Threat Actors

<table>
<thead>
<tr>
<th>Adversary</th>
<th>Motives</th>
<th>Targets</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nation State</td>
<td>• Economic, political and/or military advantage</td>
<td>• Trade secrets</td>
<td>• Loss of competitive advantage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Sensitive business info</td>
<td>• Disruption to critical infrastructure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Emerging technologies</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Critical infrastructure</td>
<td></td>
</tr>
<tr>
<td>Organized Crime</td>
<td>• Immediate financial gain</td>
<td>• Financial Systems</td>
<td>• Costly regulatory inquiries and penalties</td>
</tr>
<tr>
<td></td>
<td>• Collect information for future financial gains</td>
<td>• Personally Identifiable Information</td>
<td>• Customer or investor lawsuits or confidence</td>
</tr>
<tr>
<td>Hacktivists</td>
<td>• Influence political and/or social change</td>
<td>• Sensitive business info</td>
<td>• Disruption of business activities</td>
</tr>
<tr>
<td></td>
<td>• Pressure business to change their practices</td>
<td>• Information related to key executives, employees, customers &amp; partners</td>
<td>• Brand and reputation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Customer confidence</td>
</tr>
<tr>
<td>Insiders</td>
<td>• Personal advantage, monetary gain</td>
<td>• Deals &amp; market strategies</td>
<td>• Sensitive info disclosure</td>
</tr>
<tr>
<td></td>
<td>• Professional revenge</td>
<td>• Intellectual property, R&amp;D</td>
<td>• Operational disruption</td>
</tr>
<tr>
<td></td>
<td>• Patriotism</td>
<td>• Business operations</td>
<td>• Brand and reputation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Personnel information</td>
<td>• Customer or investor lawsuits or confidence</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Emerging technologies</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Critical infrastructure</td>
<td></td>
</tr>
</tbody>
</table>

January 17, 2014
<table>
<thead>
<tr>
<th>Scope of the challenge</th>
<th>Historical Security Perspective</th>
<th>Today’s Leading Cybersecurity Insights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership and accountability</td>
<td>• Limited to your four walls and the extended enterprise</td>
<td>• Spans your interconnected global business ecosystem</td>
</tr>
<tr>
<td>Adversaries’ characteristics</td>
<td>• IT led and operated</td>
<td>• Business-aligned and owned; CEO and board accountable</td>
</tr>
<tr>
<td>Information asset Protection</td>
<td>• One off and opportunistic; motivated by notoriety, technical</td>
<td>• Organized, funded and targeted; motivated by economic, monetary and political gain</td>
</tr>
<tr>
<td>Defense posture</td>
<td>• One-size-fits-all approach</td>
<td>• Prioritize and protect “critical assets”</td>
</tr>
<tr>
<td>Security intelligence and information sharing</td>
<td>• Protect the perimeter; respond if attacked</td>
<td>• Plan, monitor, and rapidly respond when attacked</td>
</tr>
<tr>
<td></td>
<td>• Keep to yourself</td>
<td>• Public/private partnerships; collaboration within industry</td>
</tr>
</tbody>
</table>
Mission

Cybersecurity Enables the business by ensuring trust in TPU’s operational networks and systems.

Vision

Visibility – Provide a clear, accurate view of operational technology infrastructure and software assets, and communicate their impact on the Utility.

Awareness – Identify and analyze vulnerabilities, threats and gaps in security controls to prioritize and report the risks posed to the Utility.

Response – Address the most critical risks consistently and effectively, taking into account any mitigating controls.
PARTNERS AND INFORMATION SHARING

Partners/Resources

- Ron Jimerson, CoT Chief Information Security Officer
- Large Public Power Counsel – Cyber Security Task Force (LPPC – CSTF)
- FBI Cyber Taskforce
- Industrial Control System – Cyber Emergency Response Team (ICS-CERT)
- Electronic – Information Sharing and Analysis Center (E-ISAC)
- Multi State – Information Sharing and Analysis Center – (MS-ISAC)
- Energy Sector Security Consortium (Energysec)
- And Many More
**Current State**
- We are currently in the developing stage
- All positions are now fully staffed and disciplines assigned
- Cyber Program Policy and Administrative Privileges Policy in flight.
- In process of selecting user awareness vendor

**Future State**
- Leverage NIST Framework for High, Medium, and Low Cyber Security Activities
- Reach 3.5 target maturity by next report out
- Monitoring & reporting on key security metrics to all levels of management
- Increase TPU to target maturity of 4.0
- Able to rapidly tailor security controls as required

Previous Cybersecurity Maturity Score – Level 2
Current Cybersecurity Maturity Score – 2.5
Electric & Utility Benchmark 3.8
KEY ACCOMPLISHMENTS IN 2017/2018

- **EMS Replacement Project**
- **User Awareness Campaign**
- **Deployed robust secure interactive remote access solution**
  - The solution offers better security and efficiency to the way we work.
- **Upgraded event management solution to industry leader in the space**
  - With the new solution we can now provide visibility to areas we have not had the resources to do so without requiring additional staffing to do so.
- **Security services deployed to Nisqually project**
  - We are increasing our visibility at the hydro projects allowing for a more rapid and targeted response should an incident occur.
KEY ACCOMPLISHMENTS IN 2017/2018

• **We have begun a campaign to limit local administrative privileges**
  • Within one year we have scaled back users with local administrative privileges to their workstations and seen an 80% decrease in malware incidents

• **New Data protection suite deployed in both the EMS and operational networks**
  • We are moving our posture from one of pure defense to a hybrid model. The new data protection suite gives us the ability to rapidly restore should an incident occur.

• **Increased TPU’s cybersecurity from 2.0 to 2.5**
  • We are on track to meet the goals set for this biennium and have a roadmap that will lead us to our target maturity of 4.0
**CYBER SECURITY TACTICAL ROADMAP**

*Blue projects are joint efforts with ITD*