Show Me the Money: Communicating Your Successes in Reducing EHS Costs

January 29, 2020

NAEM

Virginia Hoekenga

NAEM Deputy Director

How NAEM Membership Supports You

- ✓ Connect to peers, whose experience and knowledge can help you solve your own challenges.
- ✓ Gain insight into how peer companies are addressing similar issues.
- ✓ Find solutions to your questions via events, online learning and publications.
- ✓ Be inspired by how others have succeeded in their goals

We Connect EHS & Sustainability leaders

120

Corporate Members

4,200

Individual Members

60

Affiliate Members

Reaching a community of Practice

25K+

2020 Conference Dates

Software, Innovation & Technology Showcase	EHS Operational Excellence Conference	Sustainability Impact Conference	EHS&S Management Forum
March 4-5	**May 5-7**	**Aug 3-5**	**Oct. 20-23**
New Orleans, LA	**Columbus, OH**	**Denver, CO**	**Ft. Worth, TX**

Check our website for registration and additional information about our conferences!

www.naem.org

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- Online: www.naem.org

- Social media:
  - Twitter: @NAEMorg
  - Facebook: www.facebook.com/NAEM.org
  - LinkedIn: https://www.linkedin.com/company/naem

Remaining Activities for the Week

- Thursday, Jan 30: **Discount Day**
  - Most inexpensive prices of the year on all 2020 conference
  - Already registered for March EHS Tech Conference, offering Early Bird rate – this day only!
- Friday, Jan 31: **Raffle Day**
  - How to enter the raffle:

Take the Green Tech Survey

Follow NAEM on social media

Tag NAEM or share an NAEM post on LinkedIn, Twitter or Facebook

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Tutorials to Find Your Membership Benefits on our Website:

https://www.naem.org/resources/website-tutorials/

Show Me the Money: Communicating Your Successes in Reducing EHS Costs

Greg Derevianko
Senior Health & Safety Manager
Comcast Corp.

David Eherts, Ph.D
Vice President, Global EHS
Allergan plc
2019 NAEM Lifetime Achievement Award Recipient

Adrian Khan
Environmental, Health, Safety & Security, Senior Manager North America
Mother Parkers Tea & Coffee Inc.

Lesley Clarke
Manager, Environmental Performance
Walker Industries Inc.
2018 NAEM NexGen Leader Award Recipient

In this session

Look at two sides of the same coin…

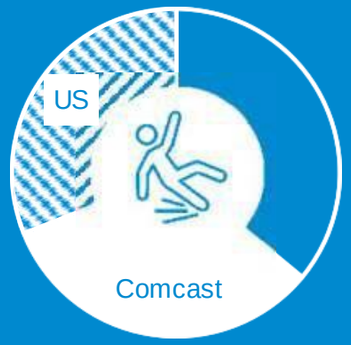
1. <u>Project-specific, real-life, case studies:</u>
   - *Take you through how EHS actions turned into overall cost savings*
   - *Describe how these realizations of cost savings were communicated within the organization*

2. <u>How to sell your idea in the first place:</u>
   - *Learn how to effectively create a business case for EHS*

The Fit Technique
Saving Money with Field Ergonomics

Comcast Health and Safety

COMCAST

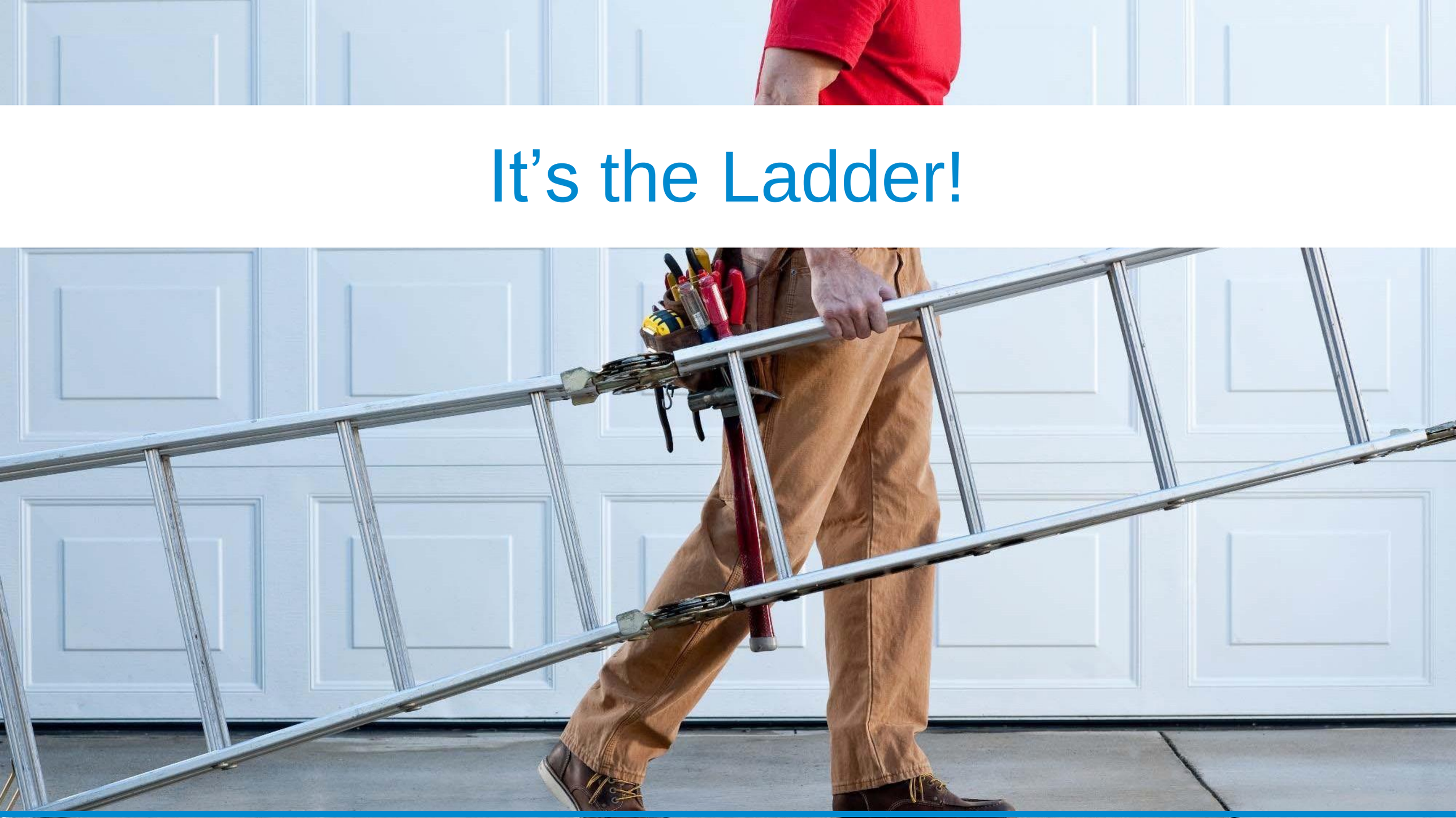


64% of Comcast Work-Related Injuries are due to Strains and Sprains

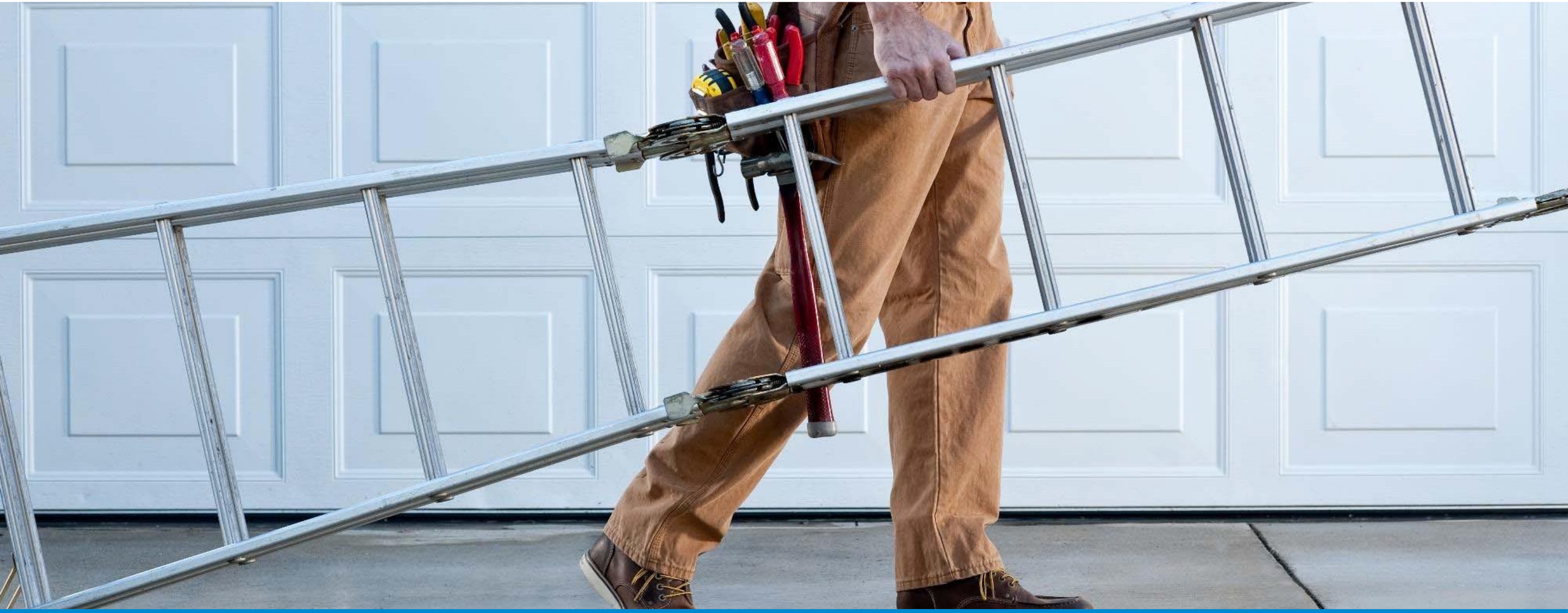
vs

31% for the US Average

It’s the Ladder!



It’s NOT the Ladder…?



Daily Risk Factors

Lifting	Pulling
Reaching	Carrying
Twisting	Slips and Trips
Kneeling	Driving

Time to Develop a Program

12 Training Videos

Coaching Guidance for Supervisors

Pamphlets

Stretches and Exercises

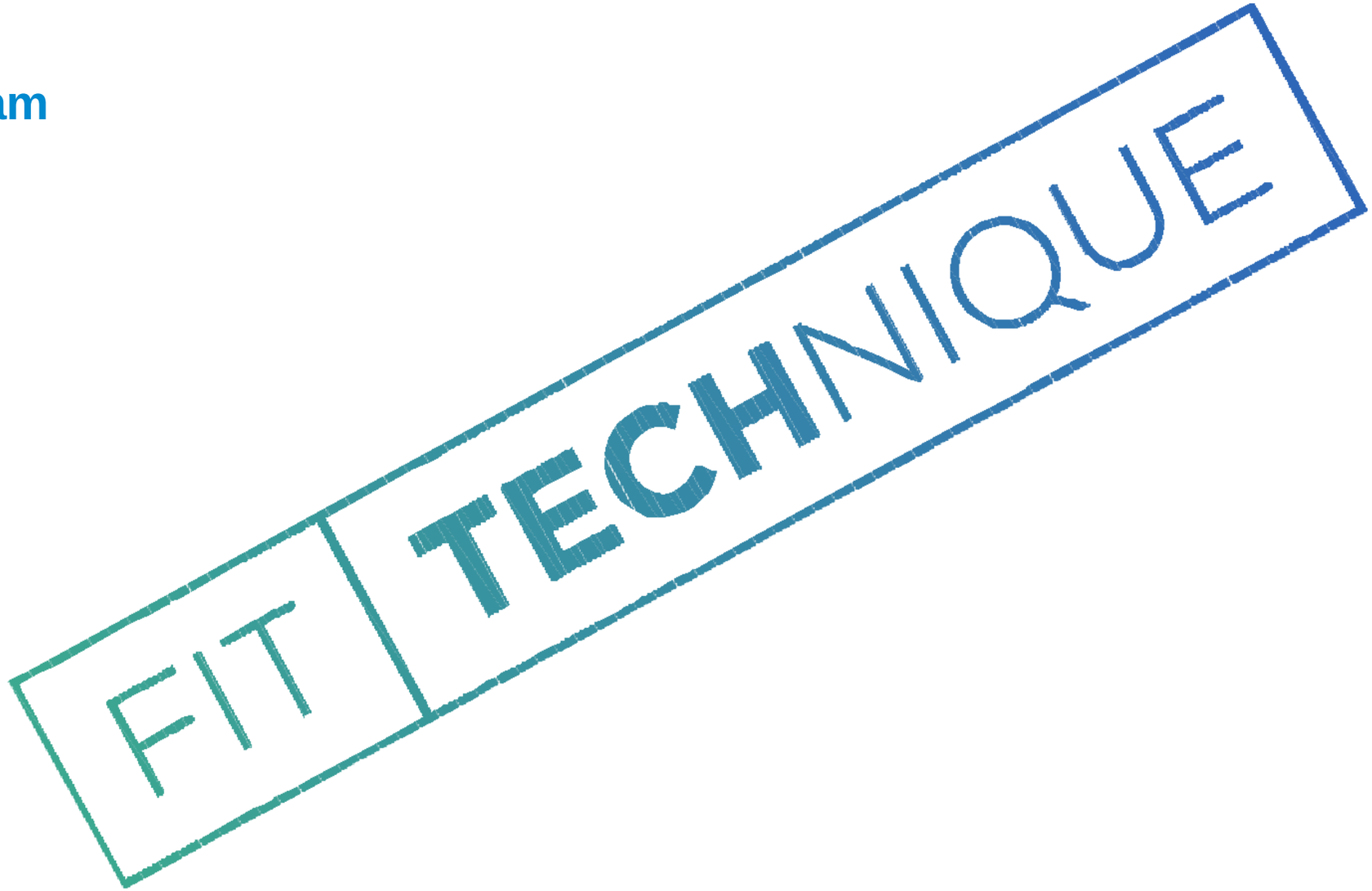
2 Methods of Deployment

Giveaways

Professional Trainers

Pilots in Multiple Regions

Logos and Branding!!



Training Videos and Associated Coaching Guidance

We have 12 videos covering:

- Ergonomic principles
- 4 kinds of lifts
- Techniques for reaching and pulling
- Kneeling and twisting methods
- Driving, 3PC
- Using these techniques at home

Each video also includes warm-up techniques and an associated exercise handout.

FIT TECHNIQUE

Coach Guidance

This page gives you, the Fit Technique Coach (FTC), ideas for furthering discussions around the Fit Technique videos. Use the information on this page as a guide for helping your employees understand the Fit Technique and put it to use. Thank you for being a Fit Technique Coach!

Video 1: Ergonomic Risk Factors

Additional Materials and Deployment

We included a kneeling pad as a give-away for all technicians who participated, and each received a pamphlet as a quick-reference guide.

To minimize impact to work needs, two methods of deployment were provided as an option to lessen technicians' time out of the field.

We have this great program to reduce injuries.
Wanna do it?

COMCAST


No.

But it has logos and branding and the pilots look promising at reducing our number one injury!

COMCAST


I said
NO.


But we have these great videos!

Show me the Money!

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Show me the Money!

$17 MILLION per year

COMCAST

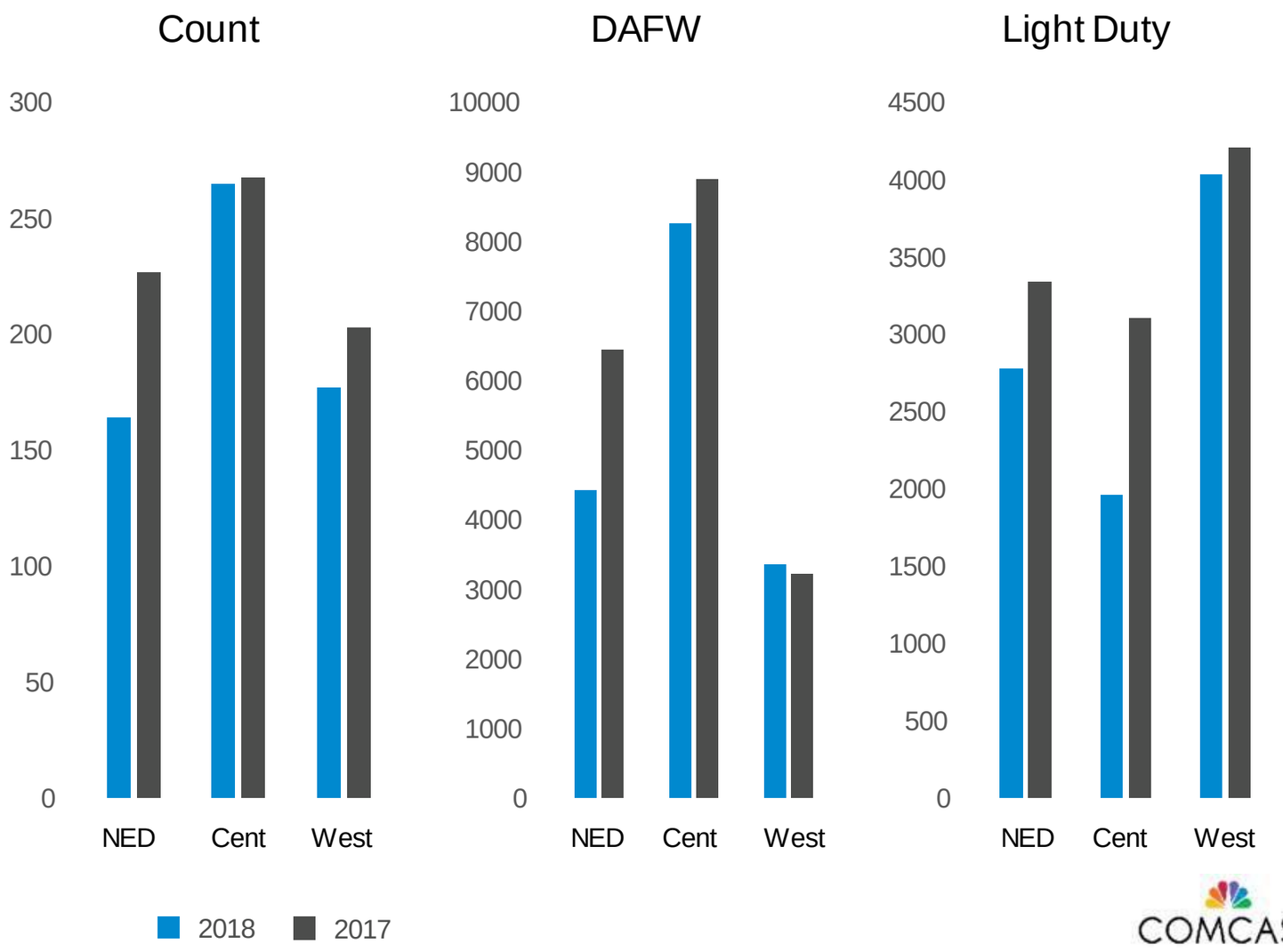
Count of Field Ergo Injuries, DAFW, and LD

Totals:

2017: 702 Injuries
18,554 DAFW
10,664 LD

2018: 608 Injuries
16,240 DAFW
8,806 LD

NED: -28% Count
-31% DAFW



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Cost of Short Term and Long Term Disability

After one year of a functional pilot, the cost of MSI to our Technical Operations was reduced by **31%** with only 2 of 5 regions in the NED participating.

2017	STD	STD EX[1]	LTD EX[1,2]	Total
NED	$1,365,729	$1,484,421	--	$2,850,150
CENTRAL	$951,621	$1,946,530	--	$2,898,151
West	$403,847	$846,719	--	$1,250,567
Total	$2,721,197	$4,277,670	$10,146,886	$17,145,753

2018	STD	STD Ex[1]	LTD Ex[1,2]	Total
NED	$940,675	$1,022,427	--	$1,963,102
CENTRAL	$883,908	$1,808,024	--	$2,691,931
West	$421,913	$884,597	--	$1,306,510
Total	$2,246,496	$3,715,047	$10,195,277	$16,156,820

1. Ex refers to the cost of external resources for technicians on leave.
2. There is no internal cost for LTD, as it is fully insured.

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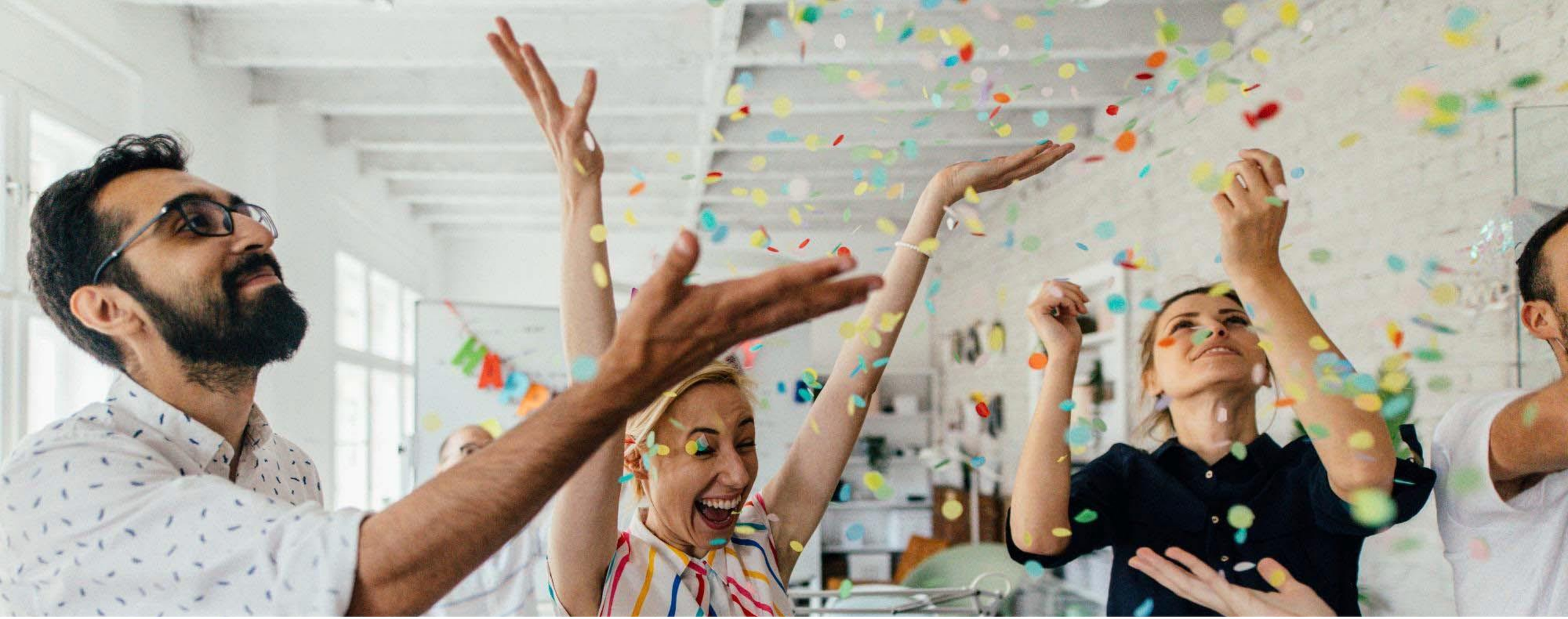

Success!

Technical Operations and Comcast University have adopted the Fit Technique as a mandatory safety training for our new hires.

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Show Me The Money: Communicating Your Successes in Reducing EHS Costs

Adrian Khan, EHSS Senior Manager

Mother Parkers Tea & Coffee

What do you think about this?

What can happen when such incidents occur?

Prevention is Key!

Mother Parkers Tea & Coffee Case Study: Distribution Centre Lighting Retrofit

The Concern

Issue with lighting was raised in our Distribution Centre through our Joint Health and Safety Committee (JHSC)

Low light levels was creating eye strain while putting away pallets into high levels of the racking system

Many of the lighting fixtures are repaired but soon burn out

Leads to loss of pallet locations and loss of productivity

The Plan

Partner with Supplier and Manufacturer to identify a solution and improve lighting conditions and reduce energy consumption

Motion study done for aisles in DC	Fixtures that reduce maintenance costs	Lighting Controls	Maximize the investment

Partner with Utility provider to obtain incentive and rebates

Involve employees in planning and solution (JHSC)

Gain approval from Senior Leadership

The Solution

- Replace 1000W and 400W metal halide lighting fixtures with high bay LED fixtures with lighting controls
- Standardize fixtures across the DC using the modelling design by the manufacturer
- Utilize the incentive program for energy conservation
- Utilize the recommendations made by the employees and the JHSC

ROI - <6 months!
Bottom up approach to the solution

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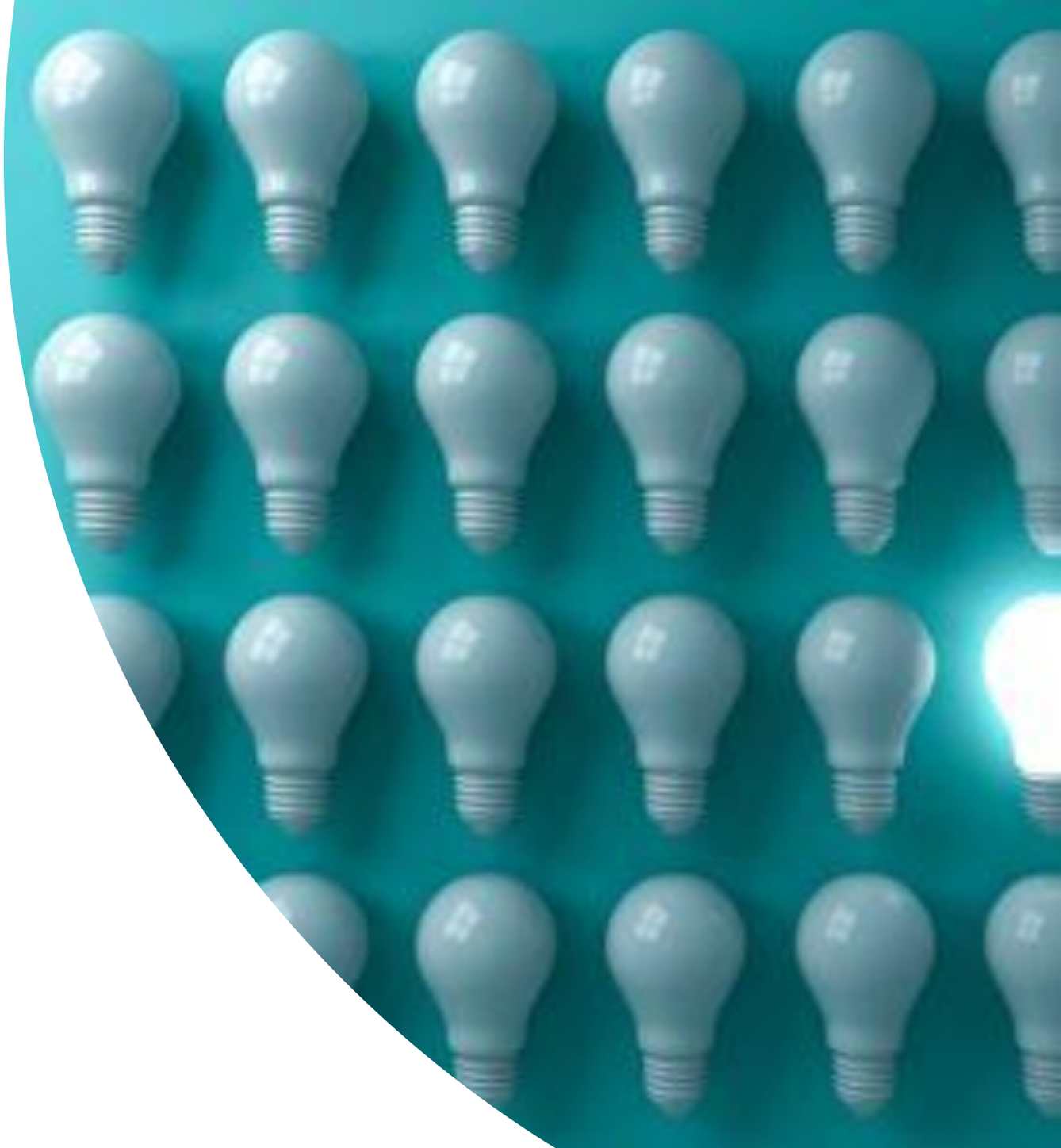
Electricity Reduction

- Cut the electricity load at the Mississauga DC by 50% (on-going savings)
- 1.7M kWh/year = enough electricity to power 170 homes for a year
- In total 294 light fixtures that resulted in 458 watt per fixture (lamp and ballast) and 144 light fixtures that resulted in 1095 watt per fixture (lamp and ballast) for a total system wattage of 292,332W
- Total system wattage was reduced to 78,840W, a significant reduction of 73% of total system wattage



Show Me The Money

Incentives, Rebates and Recognition

- >$100,000 in government and utility incentives and rebates
- 2016 CIPEC Award – Integrated Energy Efficiency Strategy
- Alectra (electricity utility provider) – Mother Parkers named as Conservation Hero (first ever)
- Morale boosting for DC Associates - intangible

Best Practice and Standardization

- Within a year:
  - Converted all of Mississauga-based facilities from the standard 1000 W and 400 W metal halide lighting to LED fixtures
  - Technology that provides brighter, lasts longer and uses a fraction of the electricity
  - The company also installed occupancy sensors, which turn on the lights only when motion is detected
  - This was a successful implementation of an EHS project that had buy-in throughout all levels in the organization and an example of how being creative with EHS can generate compelling support from all stakeholders

QUANTITATIVE COST BENEFIT ANALYSIS

NAEM

OCTOBER, 2019

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Allergan

FINANCIAL ASPECTS OF EHS MANAGEMENT

(ENHS 7260)

Class 1- Course Introduction

2018

Allergan

KEY INSIGHTS:
ASSE VALUE OF THE PROFESSION PROJECT

Areas where managers felt that the safety professionals performance fell below expectations:

Business And Strategy

- We don’t always plan and react strategically
- We don’t transform data/insights into practical solutions
- We don’t develop methods that integrate safety performance into business productivity
- We don’t align EHS project plans with overall business strategy
- We don’t understand financial related terms and information
- We don’t know how to evaluate proposed investments against their projected payoff

COURSE LEARNING OBJECTIVES

- Understand basic financial management concepts and tools.
- Understand the Macro and Micro Business Case for Safety.
- Learn how (and when) to present the benefits and costs of health and safety investments.
- Evaluate existing models for analyzing safety and health investment strategies.
- Understand how make a business case to justify health and safety investments.
- Introduce students to the Return on Health, Safety and Environmental Management (ROHSEI) software.

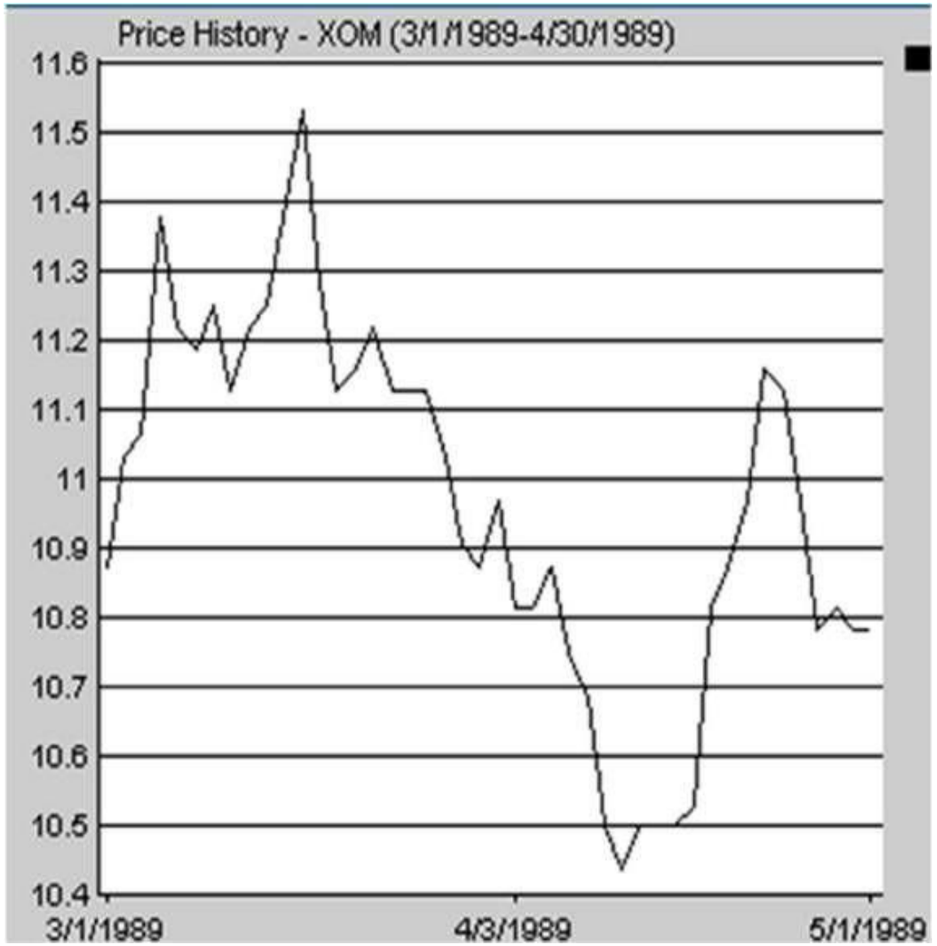
THE FINANCIAL VALUE OF SAFETY

Strategic (Macro)

- Sales
- Stock Price
  - Market Cap
- Right-to-Operate

Tactical (Micro)

- Cost-Benefit Analysis
  - ROI, NPV or DPP…



The best business cases involve both

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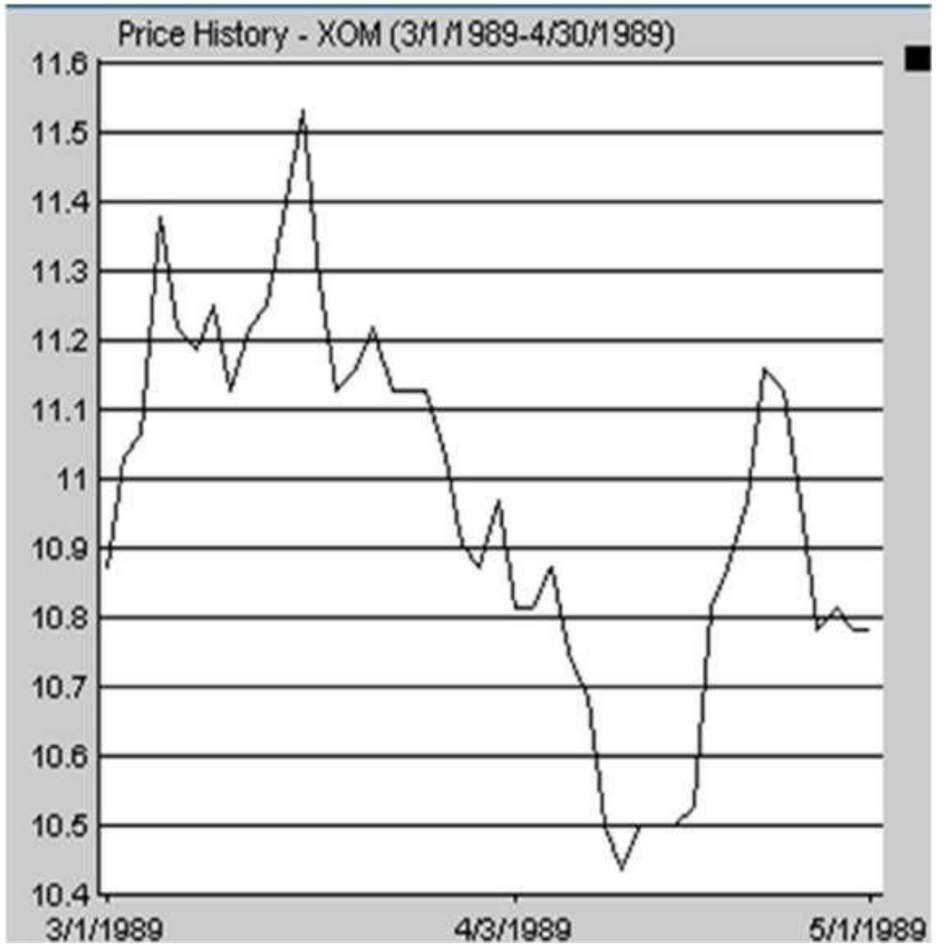

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2018 EHS PERFORMANCE HIGHLIGHTS

We continue to maintain our place amongst the most environmentally sustainable and socially responsible companies in the world

MEMBER OF
Dow Jones Sustainability Indices
In Collaboration with RobecoSAM

FTSE4Good

ENERGY STAR AWARD 2018
PARTNER OF THE YEAR
Sustained Excellence
7 years in a row

Improved from #24 in the world in 2017 to #20 in 2018

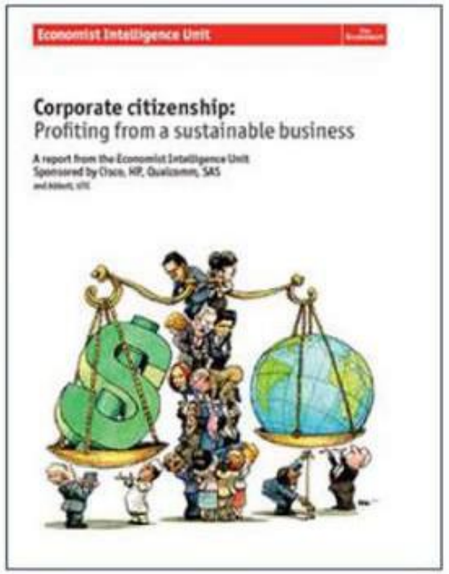
Allergan

While continuing to be amongst the safest companies in the world

STRATEGIC VALUE OF EHS PERFORMANCE

"As a strong proxy for management quality, EHS performance consistently correlates well with stock price performance."

Innovest 2005



ROHSEI

Return on Health, Safety and Environmental Investment

Making the Tactical Business Case

Bridging Financial and EHS Measures

Finance/Operations

- Earnings/EPS
- ROI
- Payback
- PVRR
- Internal Rate of Return
- Production rates
- Earnings/employee
- Net Present Value
- Cost Benefit

ROHSEI Bridges the Gap

Safety/Industrial Hygiene

- Lost Work Day injury rates
- Property loss
- Worker's compensation
- Fines and citations
- No. of people trained
- Exposure Assessments
- Near misses
- Behavioral Observations
- Audit findings

EXAMPLES OF ROHSEI PROJECTS

1. Sprinkler Protection
2. Onsite Primary Healthcare
3. Disability (STD/LTD) Mgmt
4. Disposable Coverall Recycling
5. Soil Remediation
6. HSE Websites
7. Behavior Based Safety Programs
8. Primary Healthcare in Europe
9. Epidemiology Studies and Software
10. PPE vs Engineering Controls
11. Ergonomics Programs (Lower back)
12. Ergonomics Programs (Work Station)
13. Fleet Safety Programs
14. Electronic MSDS Systems
15. PSM
16. Integrated Health and Wellness
17. IH for the FDA
18. Spin-off or Lay-off
19. EGPWS
20. SMS

21-40. Ergonomics

41. Containment and the Hierarchy of Controls

IN DEVELOPMENT:
ISPE BASELINE GUIDE ON CONTAINMENT

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The Value:

1. Elimination of PPE as a primary barrier
2. Increases in yield and product conformity
3. Decreased potential for cross contamination
4. Decreased potential for a deflagration caused by aerosolized powders or flammable vapor concentrations
5. Decreased potential for the loss of API to the environment (an important emerging issue with antimicrobial resistance)
6. Decreased potential for quality issues related to particulates and loss of asepsis
7. Decreased need for excessive ventilation (room air changes), decreasing energy costs while positively affecting climate change
8. Increases in productivity due to shortened or eliminated change-over times, faster transfer of product between unit operations (via vacuum transfer for example), decreased time spent gowning and de-gowning and scrubbing in…

Business Case Summary: Generic Containment

1. Focus of Opportunity | 2. Explore Alternatives | 3. Benefits and Drawbacks | 4. Recommendations | << | >>

What is the problem that needs to be addressed?

Is this project being conducted to reduce risk, reduce costs and/or increase revenue? If the purpose includes reducing risk, you may wish to describe the current risk level and explain why this level is unacceptable.

OSHA's regulatory driven hierarchy of controls requires that engineering controls take precedence over administrative controls and respiratory protection is a last resort and can only be used while engineering controls are being installed or if they are technically infeasible. Allergan understands that engineering controls will not just better ensure that our employees cannot be overexposed to potent pharmaceutical products but that they will increase the speed at which we develop and launch and then manufacture our products yielding a significant competitive advantage and at significantly lower overall cost.

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Administration: Generic Containment

Parameters | General Assumptions

<< >>

Required for all Analyses

Duration of Analysis (1 to 25 years)	10
Discount Rate	7.20%
Inflation Rate (Set to zero if using real budget numbers!)	2.3%
Corporate Tax Rate	37.3%

☑ Update Incident Costs ->

Required only if you want to calculate cash flows based on hours x wages instead of directly entering cash flows for the following parameters:

* Operational Employee Time
* Health and Safety Employee Time
* Design and Engineering Employee Time

Build Hourly Wages

Average fully loaded hourly wage of an operational employee	$39.11
Average fully loaded hourly wage of an EHS employee	$0.00
Average fully loaded hourly wage of a Design & Engineering employee	$0.00
Average fully loaded hourly wage of an "Other Personnel" employee	$0.00

Required only if you would like to view the following metrics:

* Impact on Unit Cost
* Percent Impact on Unit Cost

Average monthly production volume: 0

Required only if you would like to view the following metrics:

* Percent Impact on Unit Cost

Unit Cost: $0.00

Required only if you would like to view the following metrics:

* Production equivalent units

Profit per unit: $0.00

Administration: Generic Containment

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Costs:

The capital required for engineering control improvements at a new facility as compared to the previous process at the old facility is $600,000 in capital for that line. Another similar set of engineering controls will be required for a second line. Total $1.2 M in capital.

Benefits:

Extra Yield: Additional product yield is estimated at 13,350,000 tablets annually (at a cost of goods of $0.0299 per tablet) for a cost avoidanmce of approximately $400,000 annually.

Decreased Room Air Changes: For every 4 room air changes reduction, there is an energy cost savings of $100,000.

Decreased PPE usage: Cost avoidance of PAPRs and Tyvek coveralls is estimated at $405,000 annually out of a total site PPE budget of $623,000 (30 employees at $13,500 per employee per year).

Decreased time lost to donning and doffing PPE: Productivity savings are estimated at 20 minutes per employee per day (5 mins X 4 times per day) X 30 employees X 244 work days = 146,400 mionutes or 2,440 hours per year at $39.11 per hour = $95,428 productivity savings annually.

Still to be calculated: Savings in room cleaning (cange-over) time and other increases in productivity and speed including ease of working, faster launches, faster business response to changing market conditions...

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Going from this….

to this....

Analyze: Generic Containment

Containment <-- Scenarios

Incident Approach | Benefits of Project | Costs of Project | Decision Matrix

Regular Costs (Expense) | Capital Costs

Capital Costs

	Name	Equip. Costs	Install Costs	Other Cap. Costs	Total Cap. Amt.	Salvage Value	Deprec. Amt.	Initial Year	Equip. Life	Method
▶	Containment	$1,200,000	$0	$0	$1,200,000	$120,000	$1,080,000	0	10	Straigl
*										

Capital Cost: Containment

Year	Expenditure	Manual	Depreciation Method: Straight Line	Double Declining	Tax Credit
0	$1,200,000	$0	$0	$0	$0
1	$0	$0	$108,000	$240,000	$0
2	$0	$0	$108,000	$192,000	$0
3	$0	$0	$108,000	$153,600	$0
4	$0	$0	$108,000	$122,880	$0
5	$0	$0	$108,000	$98,304	$0
6	$0	$0	$108,000	$78,643	$0
7	$0	$0	$108,000	$62,915	$0
8	$0	$0	$108,000	$50,332	$0
9	$0	$0	$108,000	$40,663	$0
10	$0	$0	$108,000	$40,663	$0

Depreciation Sums

Manual Depreciation: $0
Straight Line Method: $1,080,000
Double Declining Balance: $1,071,151
Variable Declining Balance: $1,080,000

Analyze: Generic Containment

Containment <-- Scenarios

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*										

Regular Cos

Equip. Costs	Install Costs	Other Cap. Costs	Total Cap. Amt.	Salvage Value	Deprec. Amt.	Initial Year	Equip. Life
$1,200,000	$0	$0	$1,200,000	$120,000	$1,080,000	0	10

Capital Cost: Containment — Depreciation Method

Year	Expenditure	Manual	Straight Line	Double Declining	Tax Credit
0	$1,200,000	$0	$0	$0	$0
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Variable Declining Balance: $1,080,000

Capital Costs

Analyze: Generic Containment

Containment <-- Scenarios

Memo

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Incident Approach | Benefits of Project | Costs of Project | Decision Matrix

20 mins per day X 30 ees X 244 days at $39.11 per hour.

Parameter	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year
Operational Personnel Time	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428	$95,42
EHS Personnel Time	$0	$0	$0	$0	$0	$0	$0	$
Training	$0	$0	$0	$0	$0	$0	$0	$
EHS Supplies	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,00
Production Downtime	$0	$0	$0	$0	$0	$0	$0	$
Medical Costs and Insurance	$0	$0	$0	$0	$0	$0	$0	$
Loss of Raw Materials, Product	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,00
Fines and Penalties	$0	$0	$0	$0	$0	$0	$0	$
Energy	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,00

Net Incident Approach Benefit	$0	$0	$0	$0	$0	$0	$0	$0
Benefits Before Taxes	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428
Net Tax Benefits	$0	$0	$0	$0	$0	$0	$0	$0
Total Benefits	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428

Analyze: Generic Containment

Containment <-- Scenarios

Memo

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Incident Approach | Benefits of Project | Costs of Project | Decision Matrix

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Training	$0	$0	$0	$0	$0	$0	$0	$
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Production Downtime	$0	$0	$0	$0	$0	$0	$0	$
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Fines and Penalties	$0	$0	$0	$0	$0	$0	$0	$
Energy	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,00

Incident Approach | Benefits of Project | Costs of Project | Decision Matrix

20 mins per day X 30 ees X 244 days at $39.11 per hour.

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Net Tax Benefits	$0	$0	$0	$0	$0	$0	$0	$0
Total Benefits	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428

Analyze: Generic Containment

Containment <-- Scenarios

Memo: 30 ees at $13,500 per ee per year

Incident Approach | Benefits of Project | Costs of Project | Decision Matrix

Parameter	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year
Operational Personnel Time	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428	$95,42
EHS Personnel Time	$0	$0	$0	$0	$0	$0	$0	$
Training	$0	$0	$0	$0	$0	$0	$0	$
EHS Supplies	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,00
Production Downtime	$0	$0	$0	$0	$0	$0	$0	$

Incident Approach | Benefits of Project | Costs of Project | Decision Matrix

30 ees at $13,500 per ee per year

Parameter	Year1	Year2	Year3	Year4	Year5	Year6	Year7
Operational Personnel Time	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428
EHS Personnel Time	$0	$0	$0	$0	$0	$0	$0
Training	$0	$0	$0	$0	$0	$0	$0
EHS Supplies	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000

Net Incident Approach Benefit	$0	$0	$0	$0	$0	$0	$0	$0
Benefits Before Taxes	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428
Net Tax Benefits	$0	$0	$0	$0	$0	$0	$0	$0
Total Benefits	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428

Analyze: Generic Containment

Containment <-- Scenarios

Memo

Avoided scrap projected for 2015 is 5,674 kgs which = 13,349,700 tablets at

Incident Approach | Benefits of Project | Costs of Project | Decision Matrix

Parameter	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year
Operational Personnel Time	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428	$95,42
EHS Personnel Time	$0	$0	$0	$0	$0	$0	$0	$
Training	$0	$0	$0	$0	$0	$0	$0	$
EHS Supplies	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,00
Production Downtime	$0	$0	$0	$0	$0	$0	$0	$
Medical Costs and Insurance	$0	$0	$0	$0	$0	$0	$0	$
Loss of Raw Materials, Product	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,00
Fines and Penalties	$0	$0	$0	$0	$0	$0	$0	$
Energy	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,00
Benefits Before Taxes	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428
Net Tax Benefits	$0	$0	$0	$0	$0	$0	$0	$0
Total Benefits	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428

Incident Approach | Benefits of Project | Costs of Project | Decision Matrix

Avoided scrap projected for 2015 is 5,674 kgs which = 13,349,700 tablets at

Parameter	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year
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Training	$0	$0	$0	$0	$0	$0	$0	$
EHS Supplies	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,00
Production Downtime	$0	$0	$0	$0	$0	$0	$0	$
Medical Costs and Insurance	$0	$0	$0	$0	$0	$0	$0	$
Loss of Raw Materials, Product	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,00
Fines and Penalties	$0	$0	$0	$0	$0	$0	$0	$
Energy	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,00

Analyze: Generic Containment

Containment <-- Scenarios

Memo

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Incident Approach | Benefits of Project | Costs of Project | Decision Matrix

a cost of goods per tablet of $0.0299.

Parameter	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year
Operational Personnel Time	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428	$95,42
EHS Personnel Time	$0	$0	$0	$0	$0	$0	$0	$
Training	$0	$0	$0	$0	$0	$0	$0	$
EHS Supplies	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,00
Production Downtime	$0	$0	$0	$0	$0	$0	$0	$
Medical Costs and Insurance	$0	$0	$0	$0	$0	$0	$0	$
Loss of Raw Materials, Product	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,00
Fines and Penalties	$0	$0	$0	$0	$0	$0	$0	$

Incident Approach | Benefits of Project | Costs of Project | Decision Matrix

a cost of goods per tablet of $0.0299.

Parameter	Year1	Year2	Year3	Year4	Year5	Year6	Year7
Operational Personnel Time	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428
EHS Personnel Time	$0	$0	$0	$0	$0	$0	$0
Training	$0	$0	$0	$0	$0	$0	$0
EHS Supplies	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000
Production Downtime	$0	$0	$0	$0	$0	$0	$0
Medical Costs and Insurance	$0	$0	$0	$0	$0	$0	$0
Loss of Raw Materials, Product	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000

Net Incident Approach Benefit	$0	$0	$0	$0	$0	$0	$0	$0
Benefits Before Taxes	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428
Net Tax Benefits	$0	$0	$0	$0	$0	$0	$0	$0
Total Benefits	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428

Analyze: Generic Containment

Containment <-- Scenarios

Memo

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Incident Approach | Benefits of Project | Costs of Project | Decision Matrix

For every 4 room air change decrease there is $100,000 of energy savings.

Parameter	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year
Operational Personnel Time	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428	$95,428	$95,42
EHS Personnel Time	$0	$0	$0	$0	$0	$0	$0	$
Training	$0	$0	$0	$0	$0	$0	$0	$
EHS Supplies	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,000	$405,00
Production Downtime	$0	$0	$0	$0	$0	$0	$0	$
Medical Costs and Insurance	$0	$0	$0	$0	$0	$0	$0	$
Loss of Raw Materials, Product	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,000	$400,00
Fines and Penalties	$0	$0	$0	$0	$0	$0	$0	$
Energy	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,00

Net Incident Approach Benefit	$0	$0	$0	$0	$0	$0	$0	$0
Benefits Before Taxes	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428
Net Tax Benefits	$0	$0	$0	$0	$0	$0	$0	$0
Total Benefits	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428

Metrics | Decision Matrix | Calculations

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Containment <-- Scenarios

Regular Calculations

	Time 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Ye
Benefits	$0	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$6
Costs	$1200000	$332876	$332876	$332876	$332876	$332876	$332876	$332876	$332876	$332876	$1
Difference	-$1200000	$667552	$667552	$667552	$667552	$667552	$667552	$667552	$667552	$667552	$4
Benefits Adjusted for Inflation	$0	$1023438	$1046977	$1071057	$1095692	$1120893	$1146673	$1173047	$1200027	$1227627	$7
Costs Adjusted for Inflation	$1200000	$340532	$348364	$356376	$364573	$372958	$381536	$390312	$399289	$408472	$2
PV Benefit Adjusted for Inflation	$0	$954699	$911061	$869418	$829677	$791754	$755563	$721027	$688070	$656619	$3
PV Cost Adjusted for Inflation	$1200000	$317660	$303140	$289284	$276061	$263443	$251401	$239910	$228944	$218479	$1
Cumulative PV Benefit Adj. for In	$0	$954699	$1865761	$2735178	$3564856	$4356609	$5112173	$5833200	$6521270	$7177889	$75
Cumulative PV Cost Adj. for Inf.	$1200000	$1517660	$1820801	$2110085	$2386146	$2649589	$2900990	$3140900	$3369843	$3588322	$37
NPV of Project up to Year i	-$1200000	-$562961	$44960	$625093	$1178710	$1707021	$2211183	$2692301	$3151427	$3589567	$38

Tax Calculations

	Time 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Ye
Operating Benefits Before Taxes	$0	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$1000428	$6
Operating Costs Before Taxes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Tax Depreciation	$0	$108000	$108000	$108000	$108000	$108000	$108000	$108000	$108000	$108000	$1
Net Income Before Taxes	$0	$892428	$892428	$892428	$892428	$892428	$892428	$892428	$892428	$892428	$4
Taxes	$0	$332876	$332876	$332876	$332876	$332876	$332876	$332876	$332876	$332876	$1
Investment Tax Credits	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Net Taxes	$0	$332876	$332876	$332876	$332876	$332876	$332876	$332876	$332876	$332876	$1

Recommendations: Generic Containment

Metrics | Decision Matrix | Calculations

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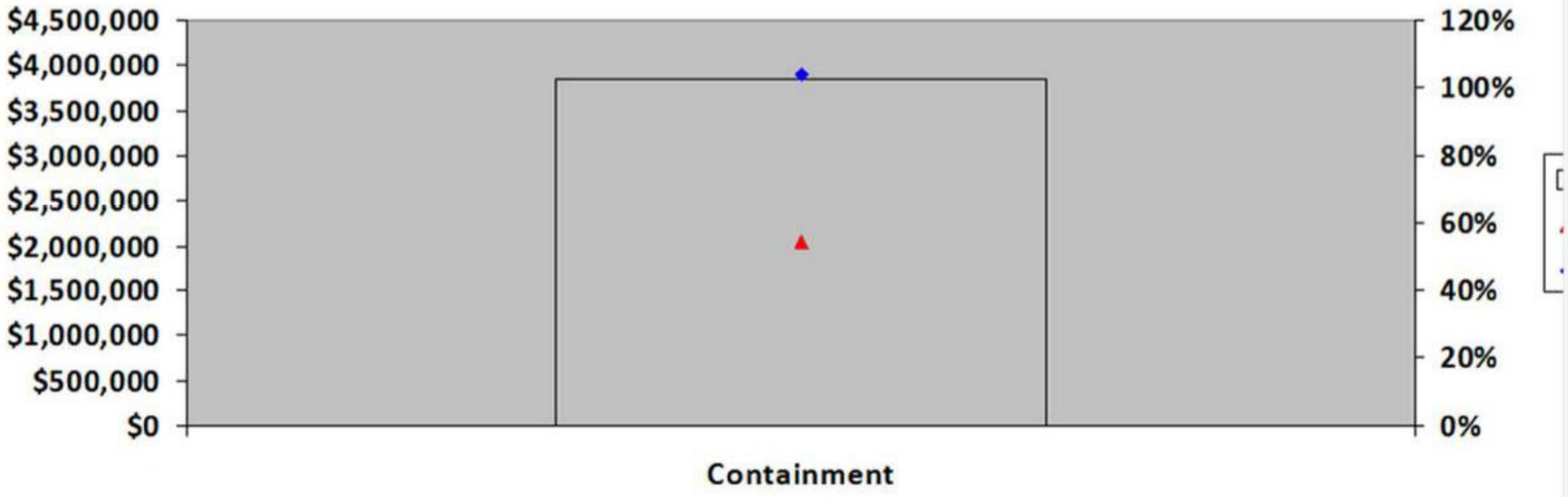
	Containment
Net Present Value (NPV)	$3,850,752
Internal Rate of Return (IRR)	55%
Return on Investment (ROI)	104%
Discounted Payback Period (DPP)	2.0 years
Production Equivalent Units	n/a
Impact on Unit Cost	n/a
%Impact on Unit Cost	n/a

Comparative Metrics

☑ DPP based on initial capital costs and cumulative net cash flows. (Unchecked--based on all costs and cumulative benefits.)



Recommendations: Generic Containment

Metrics | Decision Matrix | Calculations

	Containment
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Return on Investment (ROI)	104%
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Production Equivalent Units	n/a
Impact on Unit Cost	n/a
%Impact on Unit Cost	n/a

Summary

Being able to complete credible financial analysis changes the EHS paradigm:

- helps you decide which initiatives to bring forward
- helps you finesse management into an EHS discussion
- gives you business credibility

Financial analysis resolves the manager's paradox

- they can do the right thing
- and defend it to the shareholders

Bottom line

you get the investment and sooner
and there's no buyer's remorse

Summary

Being able to complete credible financial analysis changes the EHS paradigm:

ENSURES FULL EMPLOYMENT FOR EHS

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Allergan

Questions or Comments?
Type them into the chat box!

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Vice President, Global EHS
Allergan plc
2019 NAEM Lifetime Achievement Award Recipient

Adrian Khan
Environmental, Health, Safety & Security, Senior Manager North America
Mother Parkers Tea & Coffee Inc.

Lesley Clarke
Manager, Environmental Performance
Walker Industries Inc.
2018 NAEM NexGen Leader Award Recipient

Remaining Activities for the Week

- Thursday, Jan 30: **Discount Day**
  - Most inexpensive prices of the year on all 2020 conference
  - Already registered for March EHS Tech Conference, offering Early Bird rate – this day only!
- Friday, Jan 31: **Raffle Day**
  - How to enter the raffle:

Take the Green Tech Survey

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