

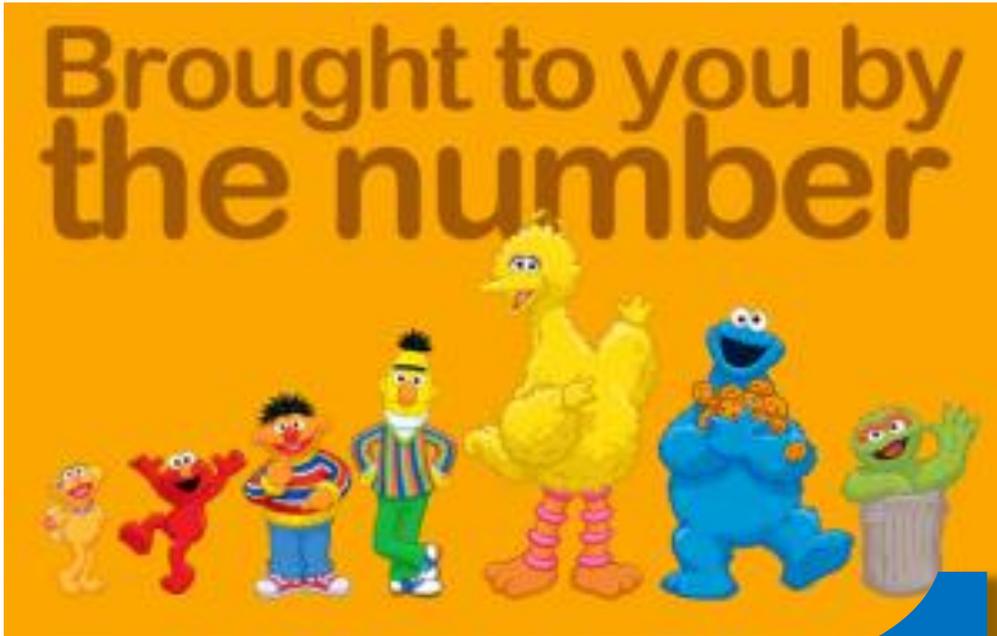


Please stay tuned for regularly  
scheduled broadcasting...

# The Lighting Show

## An Hour with John and Ryan

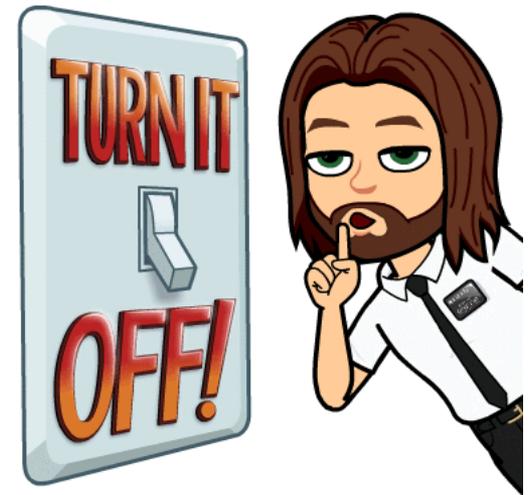




185

# Everything Must Go!

**Win LED TROFFERS  
And other lighting  
sample products BPA  
has received over the  
years...**



**NAME THAT ARTIST...**

# Today's Show

- RTF Lighting Protocol
- Lighting Calculator 3.4
- New Construction Lighting Projects
- DLC Update
- Lighting Promo Update

# RTF Lighting Protocol

Aquaman needs to consider his own usefulness... HA!

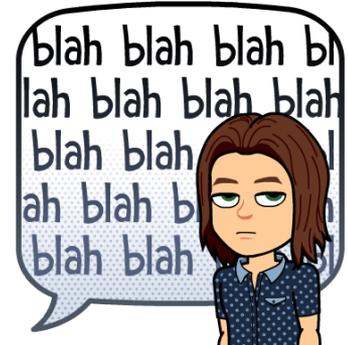
We need to consider the *Remaining Useful Life*

Aquaman... *it's actually the Effective Useful Life we should worry about*



And you guys wonder why I spend so much time at the Fortress of Solitude.

# Is he really reading the slides?



- Besides providing guidance specific to adjusting program savings prior to reporting to the Power Council, the protocol also seeks regional consistency around common program elements such as building type, space use type, HVAC interaction factors, and control savings fractions.
- RTF staff and voting members have been clear there are different ways for utility programs to align with the protocol and that the methodology for determining reported savings to the Power Council is not a mandate, but instead is guidance for utilities.

# Lighting Protocol

## Pros

- More accuracy in determining savings
- More consistency in reporting savings around the region

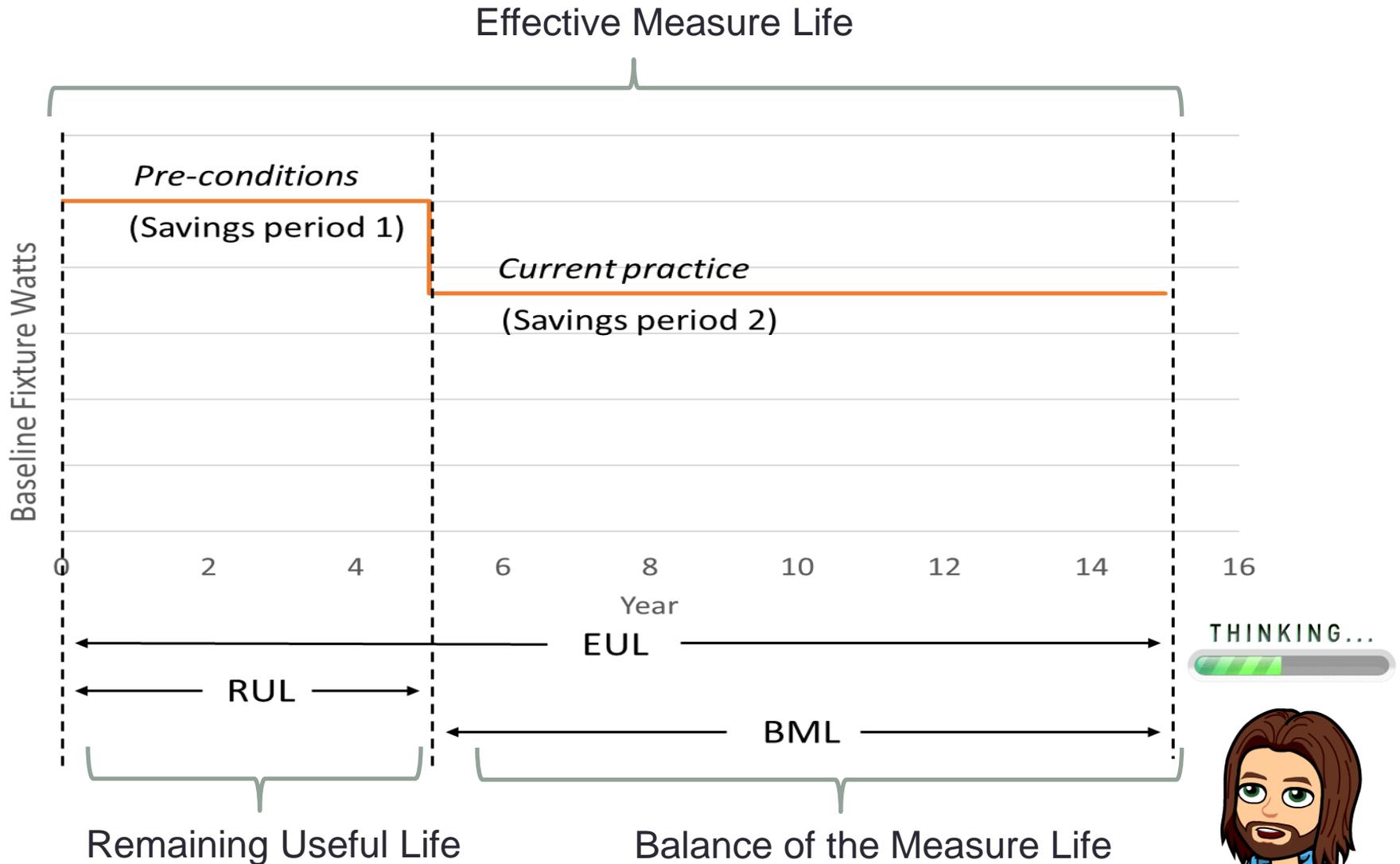


## Cons

- Potential for added complexity embedded in lighting calculators
- Shifting baselines mean program savings go down



# Technology x Application Baseline Complexity Blues



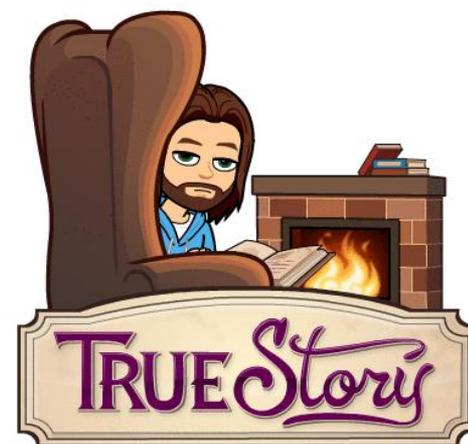
# RTF Lighting Protocol

## What we are incorporating in the next lighting calculator

- New HVAC interaction factors
- No more baseline adjustment for T12s
- More clarity on retrofit eligibility vs. new construction

## Adjustments BPA will make on the back end... (not in the lighting calculator)

- Program savings adjustments made to align with new protocol baseline



# In conclusion...

- The sky isn't falling... but things are changing.
- The BPA Lighting Team is striving to keep program implementation simple for utilities and trade allies.
- BPA will make major program savings adjustments before reporting to the Power Council.
  - Overall - program cost will go up for BPA
- BPA has a memo specific to this topic which details how we plan to align with the protocol
  - Look for it in weekly announcements



# Lighting Calculator 3.4



*Simplified process for entering a refrigerated case measure into the lighting calculator*

# Lighting Calculator 3.4

- Excel platform
- CFLs, Induction, Electronic/Ceramic MH going away
- Tubes and Small Lamps: Paid at a reduced per unit level.
- T12s back to a pre-conditions baseline
- Incandescent A-lamps (40w, 60w, 75w, 100w) will still have EISA baseline adjustments applied



# Lighting Calculator 3.4 cont.

- Thank you for your feedback over the years—we've been listening.
- Potential target date: October 1, 2017
- There will be at least 6 months of overlap between the launch of LC 3.4 and the retirement of LC 3.3.
- We're here to help transfer projects, etc.

# New Construction Projects



# New Construction Lighting Projects

## Sample LC 3.3

Minimize

HOME

<< Back

Customer Trade Ally **Project Input** Project Reports Save and Close Links

Enter details for New Construction projects. Lighting Power Allowance and Proposed Lighting Power should be obtained from COMcheck or the Washington Code Compliance Form.

### Interior Lighting

Lighting Power Allowance (Watts)	<input type="text"/>	x	<input type="text" value="5,800 hours/year"/>	=	<input type="text"/>	Code Baseline (kWh)
Proposed Lighting Power (Watts)	<input type="text"/>	x	<input type="text" value="5,800 hours/year"/>	=	<input type="text"/>	Proposed (kWh)
Primary Heating Type	<input type="text"/>				<input type="text"/>	Unadjusted Savings (kWh)
Primary Cooling Type	<input type="text"/>				<input type="text"/>	Savings %
Affected Square Footage	<input type="text"/>				<input type="text"/>	Adjusted Savings (kWh)
			<input type="text" value="Incentive (\$)"/>			

### Exterior Lighting

Lighting Power Allowance (Watts)	<input type="text"/>	x	<input type="text" value="4,380 hours/year"/>	=	<input type="text"/>	Code Baseline (kWh)
Proposed Lighting Power (Watts)	<input type="text"/>	x	<input type="text" value="4,380 hours/year"/>	=	<input type="text"/>	Proposed (kWh)
Affected Square Footage (if applicable)	<input type="text"/>				<input type="text"/>	Unadjusted Savings (kWh)
			<input type="text" value="Incentive (\$)"/>			Savings %
					<input type="text"/>	Adjusted Savings (kWh)

# New Construction Lighting Projects



COMcheck Software Version 4.3.4

## Interior Lighting Compliance Certificate

### Project Information

Energy Code: 2012 IECC  
 Project Title:  
 Project Type: Addition

Construction Site: Owner/Agent: Designer/Contractor:

### Allowed Interior Lighting Power

A Area Category	B Floor Area (ft <sup>2</sup> )	C Allowed Watts / ft <sup>2</sup>	D Allowed Watts
1-Workshop	1728	1.39	2419
Total Allowed Watts =			2419

### Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
1-Workshop LED: LED Linear 15W:	2	16	30	480
Total Proposed Watts =				480

**Interior Lighting PASSES: Design 80% better than code**

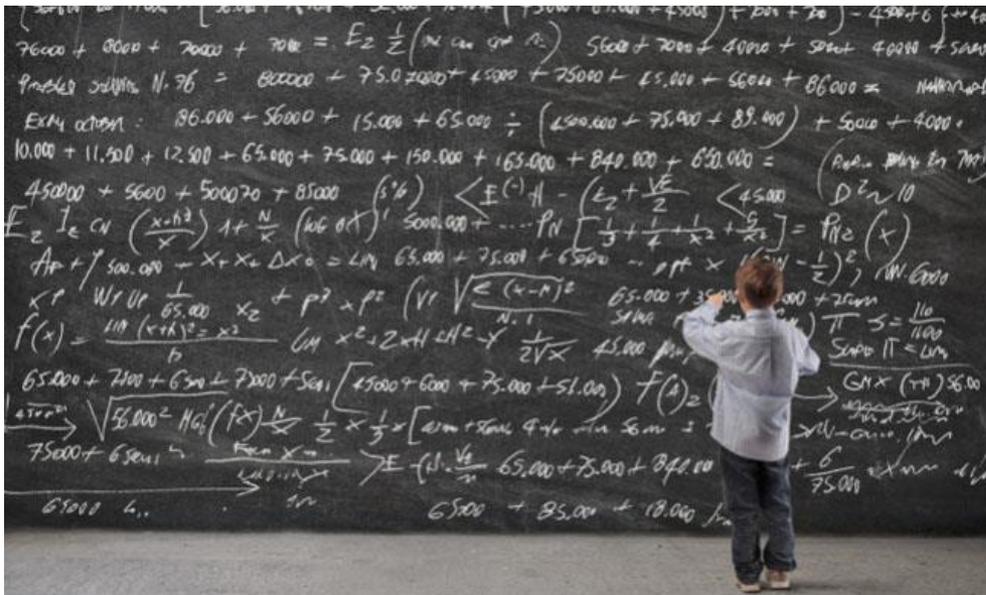
**Interior Lighting Compliance Statement**

# New Construction Lighting Projects

1. ComCheck / WA Code Compliance Form
2. Refer directly to state code
3. Common Practice (if 1 & 2 don't apply)

TABLE 505.5.2(a)  
INTERIOR LIGHTING POWER ALLOWANCES

LIGHTING POWER DENSITY	
Building Area Type	(W/ft <sup>2</sup> )
Automotive Facility	0.79
Convention Center	1.08
Court House	1.05
Dining: Bar Lounge/Leisure	0.99
Dining: Cafeteria/Fast Food	0.90
Dining: Family	0.89
Dormitory	1.0
Exercise Center	0.88
Gymnasium	1.00
Healthcare—clinic	0.89
Hospital	1.08
Hotel	1.0
Library	1.17
Manufacturing Facility/Data Center	1.24
Motel	1.0
Motion Picture Theater	0.83
Multifamily	0.58
Museum	1.04
Office	0.91
Parking Garage	0.25
Penitentiary	1.0
Performing Arts Theater	1.39
Police	0.89
Fire Station	0.74
Post Office	0.98
Religious Building	1.05
Retail	1.32
School/University	1.01
Sports Arena	0.78
Town Hall	0.94
Transportation	0.77
Warehouse	0.66
Workshop	1.2



# New Construction: Code Example

- WA parking lot code = 0.06 watts per sq. ft.
- Parking lot is 58,500 sq. ft. x 0.06 watts =  
Lighting Power Allowance (LPA) of **3,510** watts
- 17- 130w Cree LEDs = Proposed Lighting  
Power **2,210** watts

## New Construction: Common Practice Example

- Applies when a ComCheck/WA Code Compliance form is unavailable or code doesn't apply.
- 19- 288w MH = Hypothetical Lighting Power Allowance (LPA) of **5,472 watts**
- 19- 86w GE LEDs = Proposed Lighting Power **1,634 watts**

Please consult BPA Lighting Team or NWTAN to validate common practice assumptions.

# Design Lights Consortium Update



# Design Lights Consortium Update

Category	Minimum Light Output (lumens)	Minimum Efficacy (lm/W) Previous	Minimum Efficacy (lm/W) New
Outdoor- Low Output	250-5,000	65	90
Outdoor- Mid Output	5,000-10,000	70	95
Outdoor- High Output	10,000-30,000	75	100
Refrigerated Case Lighting	$\geq 50$ lm/ft	50	80
Troffer	$\geq 1,500$	85	100
4' Replacement Tubes*	$\geq 1,600$	100	110
High Bay	$\geq 5,000$	80	105

*\*Bare lamp*

## Design Lights Consortium Update cont.

- Several categories are experiencing an efficacy increase of 25-30%.
- On April 3, 2017, approximately 40% of the current products will be removed from the active QPL. Previously, a 30% reduction in products took about 3 months to recover.
- These products will still be searchable using the “Include De-Listed Products” feature on the DLC search page.
- Does BPA require LEDs to be DLC-listed?

# Design Lights Consortium Update cont.



[Solid State Lighting](#) [Lighting Controls](#) [News & Events](#) [Terms](#)

Solid State  
Lighting

Search Results:

288611

Search for qualified lighting products by model, brand name, manufacturer

Save This Search

Download Results

Compare Selections

Customize View

Results Per Page

Sort Results

Display As List

## Filter Results

Clear All Filters

## Listing Status

- Show listed products
- Show de-listed products
- Show all products

## Manufacturer

Add Manufacturer

**Model #** DC056L17W2000LMV30K (Blank, PC,P1)

**Manufacturer:** Texas Fluorescents  
**Brand:** Fleco  
**Technical Requirements Version:** 4.1  
**Date Qualified:** 03/13/2017  
**Product ID:** PNURUEKP

## Categorization

**Main:** Outdoor Luminaires  
**General Application:** Low Output  
**Primary Use:** Outdoor Non-Cutoff and Semi-Cutoff Wall-Mounted Area Luminaires

**Classification:** Standard  
**Is Parent Product:** Yes  
**DLC Family Code:** EEEEXF  
**Dimming Status:** NotDimmable  
**Listing Status:** Listed

[View Notes](#)

# Design Lights Consortium Update

## NEW PRODUCT CATEGORY

Individual Lamp Criteria (Bare Lamp)	
System Efficacy	$\geq 75$ lm/W
Initial Light Output	$\geq 675$ lm
CCT	$\leq 5,000$ K
CRI	$\geq 80$
Power Factor	$\geq 0.90$
Total Harmonic Distortion	$\leq 20\%$
Warranty	$\geq 5$ Years

Must have a four-pin configuration (i.e. G24q/GX24q base)

Must use the existing CFL ballast

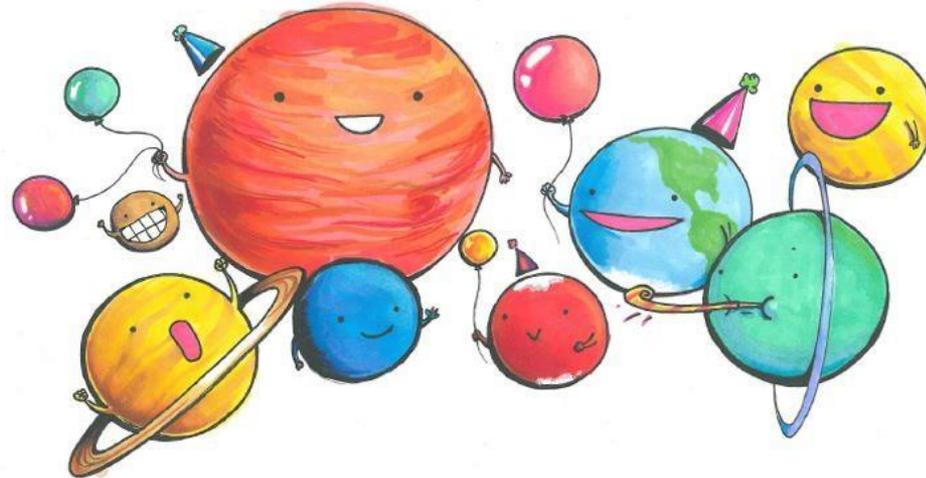


Let's have a naming competition!

NEW SHOW SEGMENT

# Welcome to Planet Planning

HOW DO YOU ORGANIZE  
A SPACE PARTY?



YOU PLANET.

# Planet Planning

Ask a BPA Planner...

*To: BPA*

**W**e incentivized a project a few years back for high performance **T8's** and now we are paying them again to install **TLEDs**...is BPA cool with that

*From: Progressive Utility*

Ben from  
BPA:  
**Great  
Question!**

# Planet Planning

**Yeah... we're cool with that...**

***Wait... you are?*** What about double counting the savings? Or double paying? *Or measure life...* don't those things factor in?

Have a question for a BPA Planner? Send it in to the Lighting Team and we'll feature it on the next lighting show

# Small Business Lighting Promotion



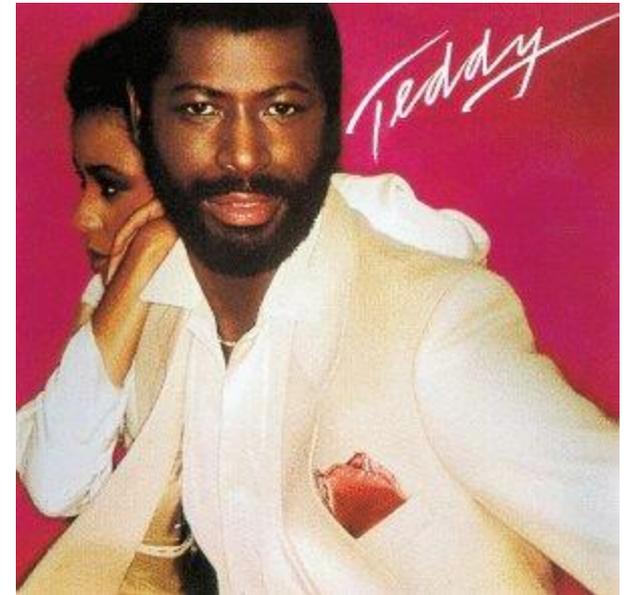
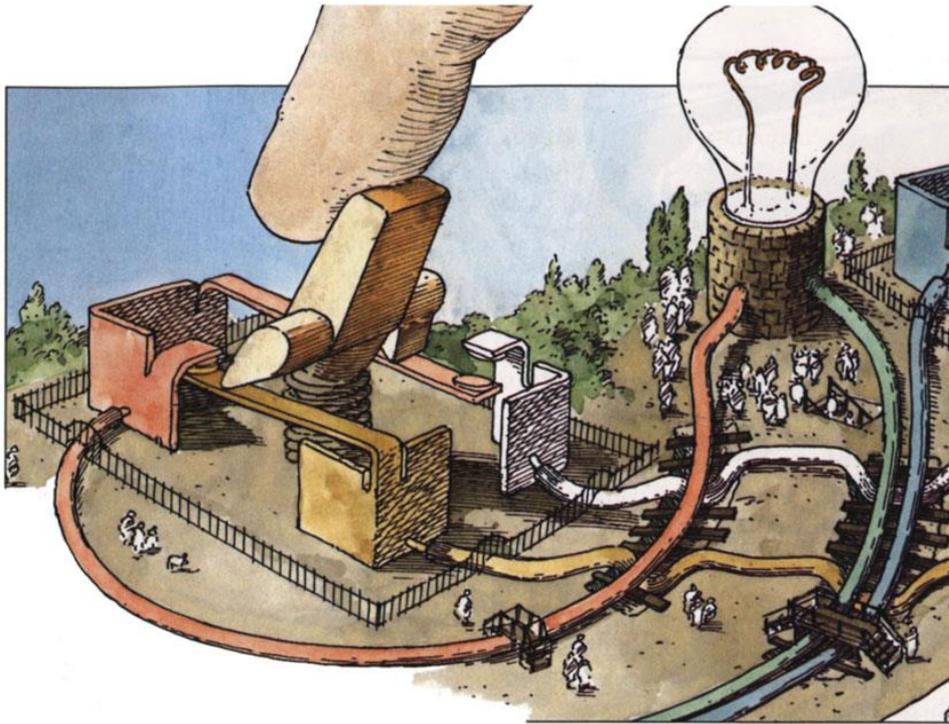
*Everyone but Paul is excited.*

# Small Business Lighting Promotion

- By popular demand: Extended through September 30, 2017!
- Submit to BPA for invoicing by 9/30/17.
- New construction projects are not eligible for the promotion.

# *That's all folks...*

A big thank you from the BPA Lighting Team...



Teddy Pendergrass –  
*Turn off the Lights*

Please send comments or questions to [Lighting@BPA.gov](mailto:Lighting@BPA.gov)