

Question & Answer Notes:

**NAVFAC**

- Question: Who is responsible for meeting criteria in the UFC?

Answer: Ultimately, government employees and design/construction contractors performing work for the government are responsible for complying with the criteria. All materials and equipment provided under government contract must comply with the criteria.

- Question: Regarding Criteria, how can suggestions be made to change criteria? Can you explain how to accomplish this?

Answer: One can go to the Criteria page on the Whole Building Design Guide website; the right hand column is titled CCR (Criteria Change Request). This is where suggestions for criteria changes can be submitted. The Electrical Criteria Working Group will review and respond to all CCRs. Approved CCRs may result in an immediate change or be included in the next criteria revision.

- Question: How do you prioritize energy projects? Is there policy to ensure that lighting controls for deeper energy savings are implemented? Do you lower the priority of a project if it has a lower energy savings?

Answer: We work in the Criteria Programs Office, so we are not involved with prioritizing energy projects. I believe CNIC and others primarily look at the funding required and the simple payback to rack and stack projects. However, our criteria and ASHRAE have specific control requirements that must be met on all projects. UFC 1-200-02 – Chapter 3 outlines minimum required energy reduction in the payback.

- Question: Is anything being done with the lighting UFC to make sure lighting controls do not get value-engineered out of lighting designs?

Answer: We are mandated to meet ASHRAE 90.1. ASHRAE 90.1 and our criteria have specific lighting control requirements that must be met. We should not be removing required lighting controls from our projects. If a command is doing that, we need you to remind them of the ASHRAE and UFC requirements regarding controls.

- Question: Our company was approached to replace existing lighting with TLED technology. We were informed that TLED cannot be used per the April 2015 version of the UFC. We have submitted a CCR to have this changed. Can you tell me why the April version of the UFC does not allow TLED?

Answer: This prohibition was not new in April 2015; this was in previous versions of the UFC. DoE just published the CALiPER 21 reports on their testing of TLEDs, and they had serious concerns with the technology. When we were in the process of adopting LED for exterior lighting, there were some projects with exterior lighting that utilized LED retrofit lamps for direct replacement in HPS luminaires. We were informed that these projects experienced a very

high failure rate. Therefore, we try to rely on industry standards, and as you know, there are limited industry standards for TLED. The Electrical Engineering working group has been monitoring the technology for about four (4) years and agrees that with the correct guidance, there may be application for this technology. The Chief Engineer of NAVFAC recently signed a memo allowing TLED and retrofit conversion kits for the Department of the Navy with specific guidance. A change to the lighting UFC implementing TLED with specific guidance will be issued in the very near future.

## **DOE/FEMP**

- Question: With respect to the Yuma border project, were lighting controls implemented?

Answer: Not currently, but they are considering implementing controls to reduce energy consumption.

- Question: Do we have access to these slides?

Answer: No they are not accessible, but if you have more questions we can get together during a break.

NAVFAC NOTE: Today's presentations will not be posted on a website or distributed.

## **CLANTON AND ASSOCIATES**

- Question: Where is moonlight in the light spectrum?

Answer: Moonlight has a spectrum very similar to the sun since it is reflected sunlight.

- Question: Where did the melanopic lumen information come from?

Answer: I do not know; I believe it is Europe-based and industry-based. We will have to speak on this at the break.

## **EATON'S COOPER LIGHTING**

- Question: So as you heard, TLEDs are being allowed by the Navy. What happens to the luminaire warranty?

Answer: We will not honor the warranty of the ballast or fixture if a TLED is put into one of our luminaires, and I doubt if any manufacturer would. The question will be, "Who is responsible? The TLED manufacturer? The contractor?" It will not be the lighting fixture or ballast manufacturer.

- Question: Can you explain UL Listing vs. Classification?

Answer: UL Listing means UL has visited the factory, monitored the manufacturing process and testing, and provides a listing regarding the safety of the luminaire. UL Classified means if installed properly, a luminaire would be classified to be suitable to operate safely. This is solely dependent on the installer understanding and following the manufacturer's instructions. The problem is with field verification of the installation.

- Question: How do we properly specify total harmonic distortion (THD) for the dimming range of a light source?

Answer: The lower the lighting load is below the light source driver rating, the higher the impact will be to power quality as the light source is being dimmed. The THD will get higher and the power factor will get lower.

- Question: If we specified less than 20% THD at 50% dimming, could you meet that? Those are the numbers we are considering.

Answer: Yes, We can meet that. Any manufacturer should be able to provide their product's performance characteristics.

## **AMERI ENERGY GROUP**

- Question: Do you warranty the roof?

Answer: No, we would not warranty the roof. We only warranty our product.

- Question: Who installs the system; the electrician or the roofer?

Answer: The installation is similar to a skylight, but an electrician provides the wiring if LED modules are provided.

- Question: Is the system rated for hurricanes, snow loading, etc.?

Answer: Yes, the system is rated for these loads.

- Question: What is the color temperature of the LEDs?

Answer: The LEDs come in various color temperatures. Color temperature needs to be specified when ordering.

## **LUTRON ELECTRONICS**

- Question: We have seen two different strategies on lighting control. Where is the balance between individual fixture controls and zoned controls?

Answer: We get more negative feedback on individual fixture control than zoning. We provide fixture control on individual fixtures for rehabs to reduce cost due to the additional rewiring requirements. For new construction, we would lean toward zoning depending on the application.

- Question: How was the energy savings data collected and was it verified?

Answer: The energy savings data is actual data, recorded at the control panel.

- Question: How does the size of the space influence the energy savings resulting from lighting controls?

Answer: We see different energy savings for different size spaces. There may be a break point, but we have not collected data to support a conclusion.

- Question: Is there a way to monitor and verify that the light output of a fixture does not drop below 70% of the initial value?

Answer: We will have to go back and look into that.

- Question: To compete with cheap and loose, how does one justify the lighting control solution that gets 60% savings, in lieu of 30%, when completed?

Answer: One must look at a 10 year life cycle. Question is, "Would you rather have 10 years of 30% energy savings or 10 years of 60% savings?"

#### **NET ZERO, USA**

- Question: Does the "Lighting In A Box" LED conversion kit cost \$75?

Answer: \$75 is correct.

#### **PHILIPS LIGHTING NORTH AMERICA**

- Question: Is this lighting control solution wired or wireless?

Answer: Both wired and wireless solutions are available.

- Question: Do you have both of these systems?

Answer: Wireless is available via GSA; however, we do offer both types.

- Question: Why don't you use powerline carrier instead of wireless?

Answer: Powerline carrier systems are used in Europe. There are products at Philips that can do this. However, there are issues with dirty power and reliability, and the industry has had mixed results. Therefore, most would recommend a wireless system.

#### **WESCO DISTRIBUTION**

- Question: When you are working on a project and you see they aren't using the UFC, what do you do?

Answer: We have not had an issue with UFC compliance. We perform checks on all of our projects to make sure the proper requirements are being met.

## CLOSE OUT QUESTIONS AND ANSWERS

- Question: Who decides what systems people can use for lighting controls?

Answer: First, the control system must meet the requirements of our criteria. If a network-based control system is chosen, it must go through some level of IT certification. The level of certification depends on whether the system transmits what is considered DoD information. If it does not transmit DoD information, the simpler Platform IT certification process is followed. Most lighting control systems fall under this process. Our Utility Working Group is currently working on a UFC for the certification process; it should be finalized within a couple of months. If you have any projects that have gone through the network certification process, please let us know.