

Electromagnetic Frequency (EMF) Exposure on Studio Sets



IATSE, Local 728

Burbank, CA

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BS Public Health

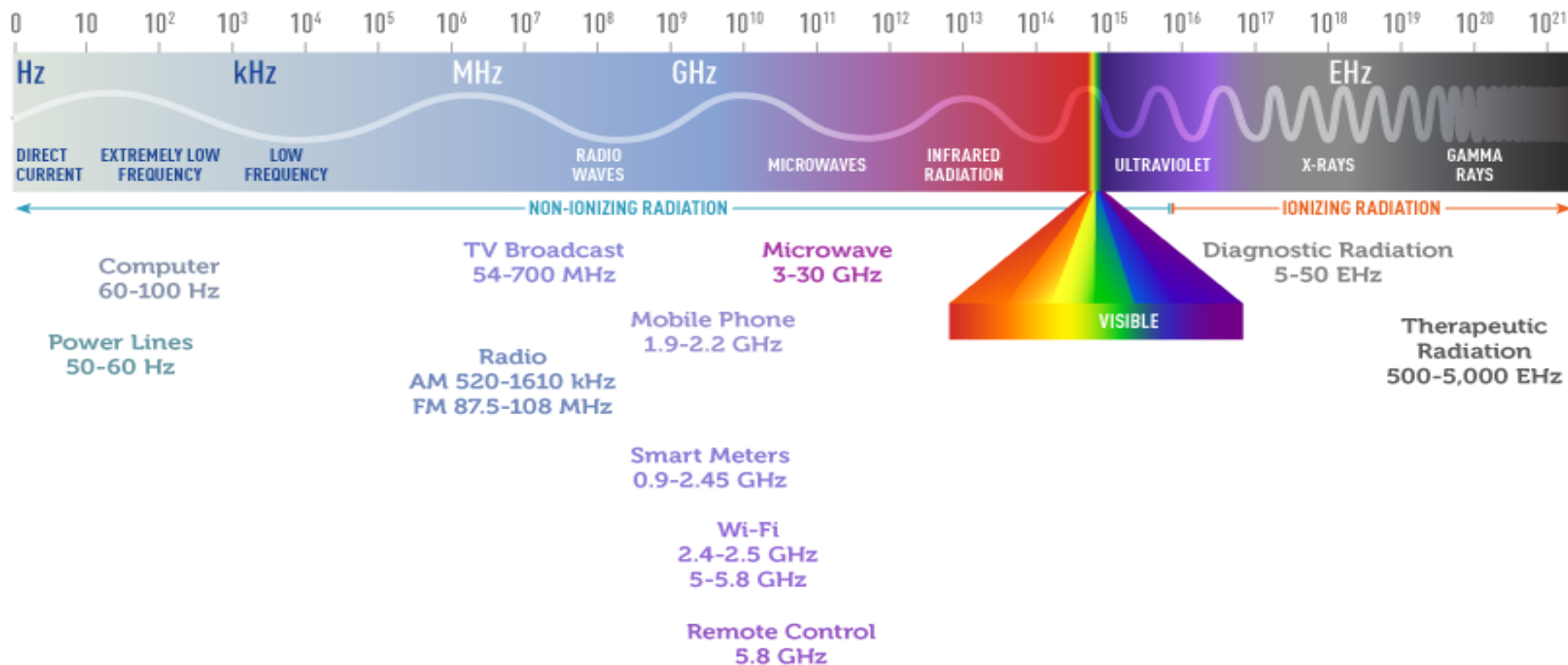
Introduction



*All 3 images via IATSE Local 728 Instagram @iatselocal728

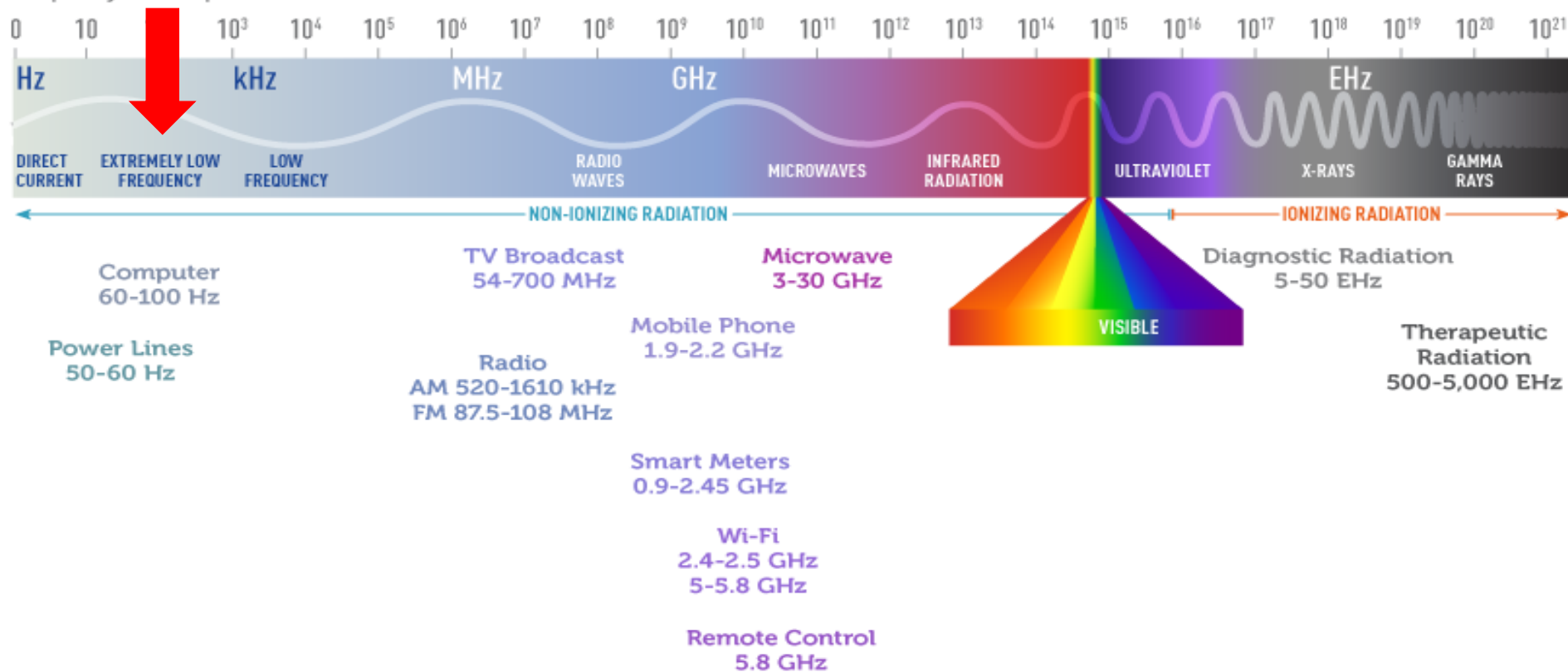
ELECTROMAGNETIC SPECTRUM

Frequency (waves per second)

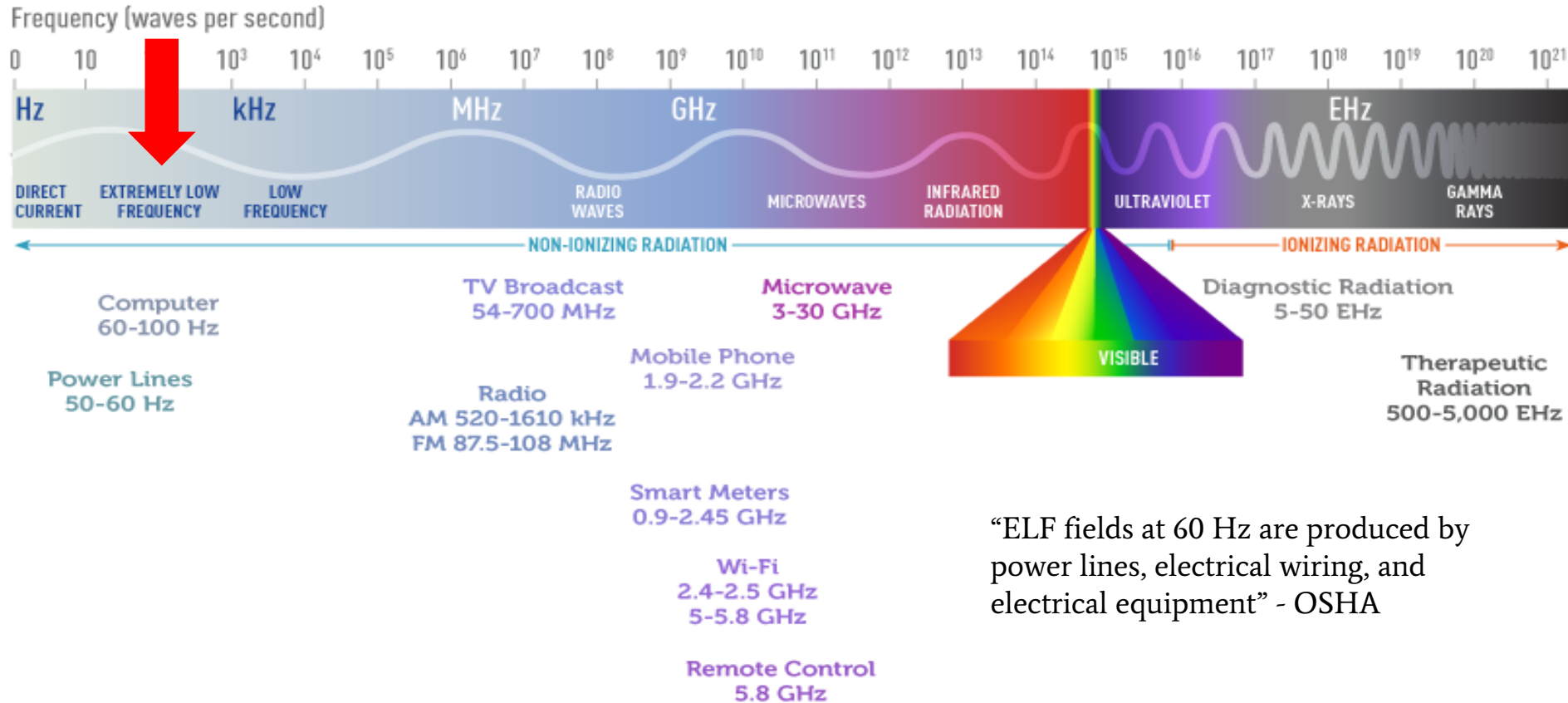


ELECTROMAGNETIC SPECTRUM

Frequency (waves per second)

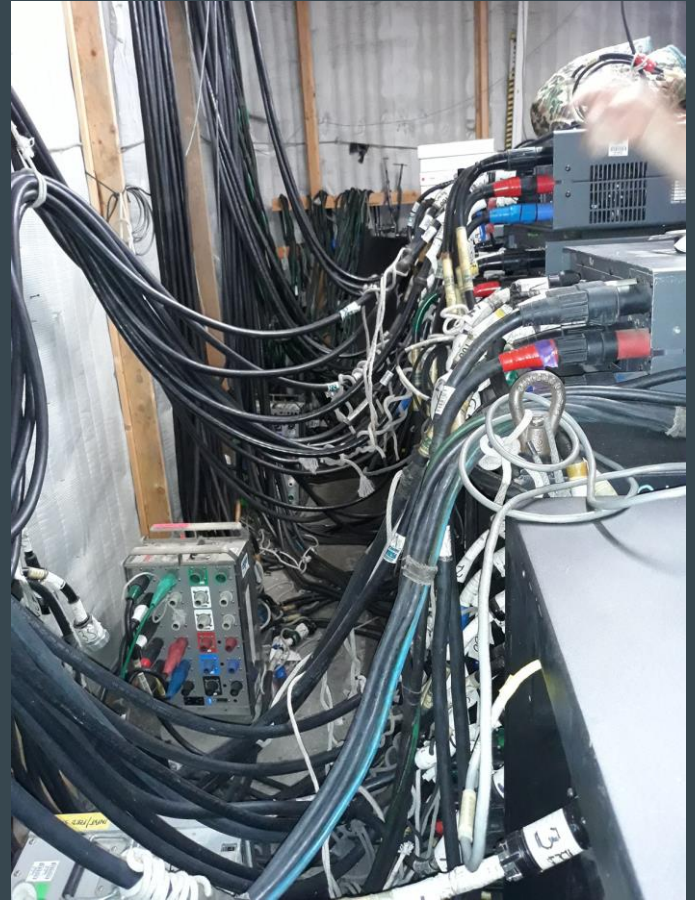


ELECTROMAGNETIC SPECTRUM



“ELF fields at 60 Hz are produced by power lines, electrical wiring, and electrical equipment” - OSHA

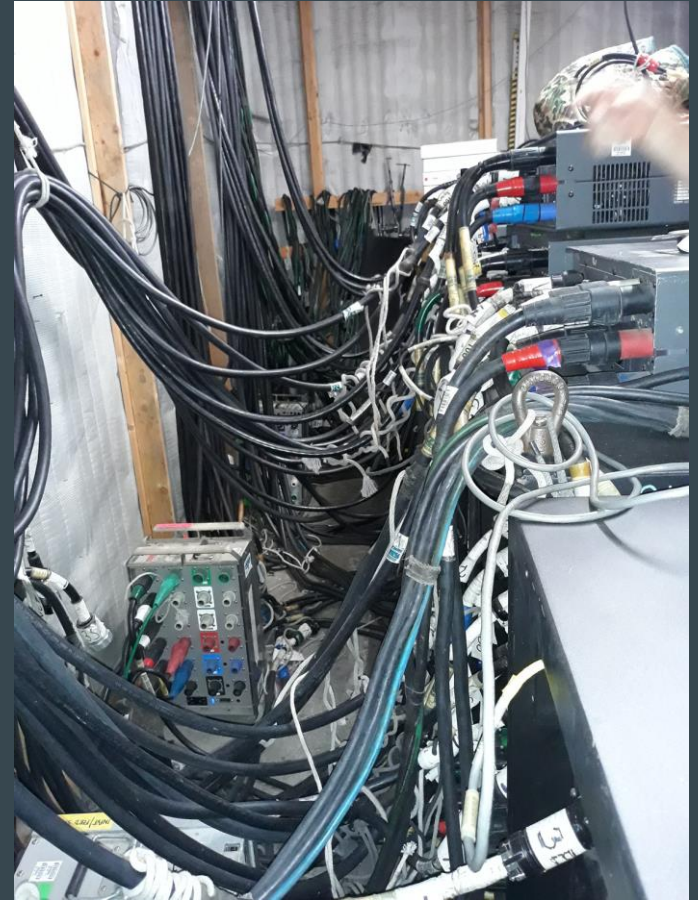
Background



Back of dimmers at CBS Studios

Background

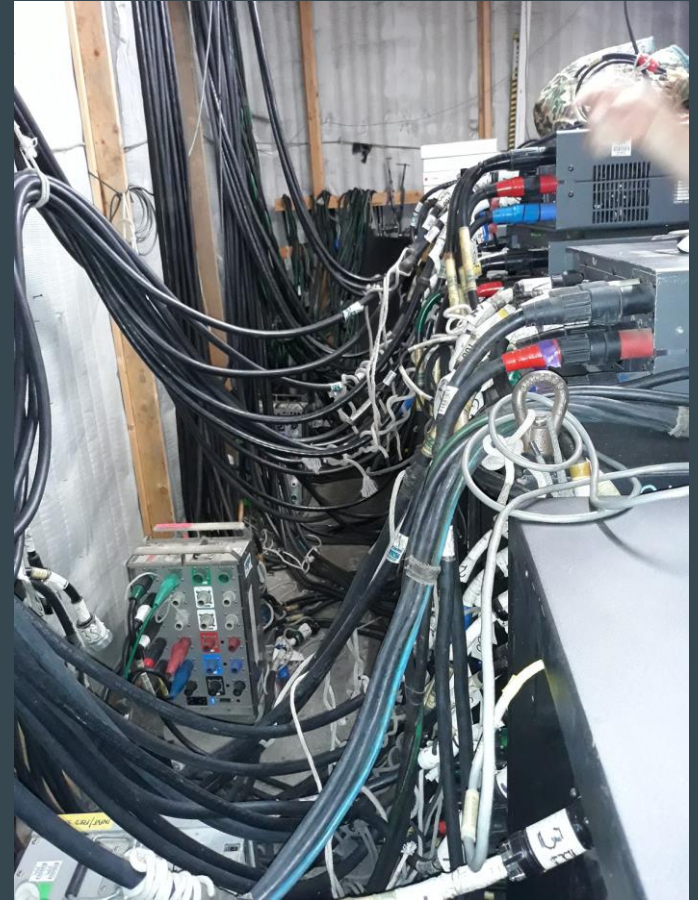
- Voiced membership concern
 - Fear of EMF Exposure
 - Fear of adverse health impacts



Back of dimmers at CBS Studios

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 - Fear of EMF Exposure
 - Fear of adverse health impacts
- Uncertainty with research on potential health impacts on exposure to EMF's and ELF specifically.



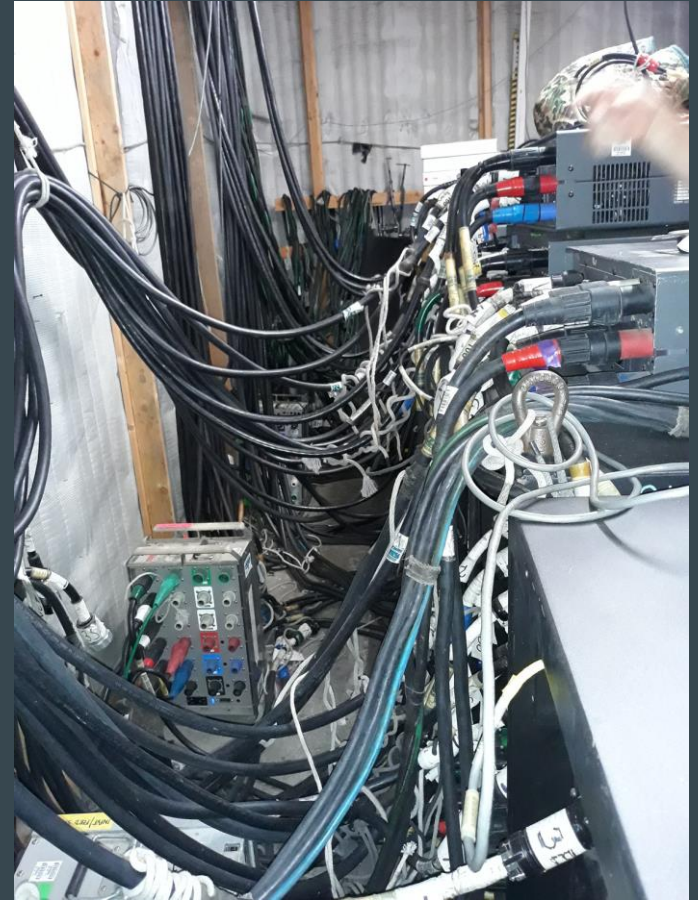
Back of dimmers at CBS Studios

Background

- Voiced membership concern
 - Fear of EMF Exposure
 - Fear of adverse health impacts
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“The issue of extremely low frequency (ELF) biological effects is very controversial. Research has focused on possible carcinogenic, reproductive, and neurological effects. Other suggested health effects include cardiovascular, brain and behavior, hormonal and immune system changes”

- OSHA



Back of dimmers at CBS Studios

Objectives

- Exploratory Study
- Address Union Membership concerns
- Potential for future studies
- Provide information for the greater film industry



Equipment Overview (Instrument)

- EMDEX II Meter
 - Magnetic Radiation (milliGauss)
 - Software: EMCALC 2013



Equipment Overview (Lighting)



HMI TUNGSTEN HEAD



Cables/Distribution
* image via IATSE 728 instagram



Generator



Dimmer Room, CBS Studios



HMI BALLAST

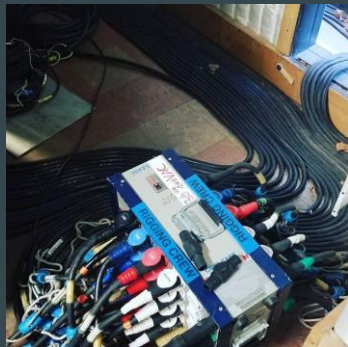


Transformer

Equipment Overview (Lighting)



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Methods

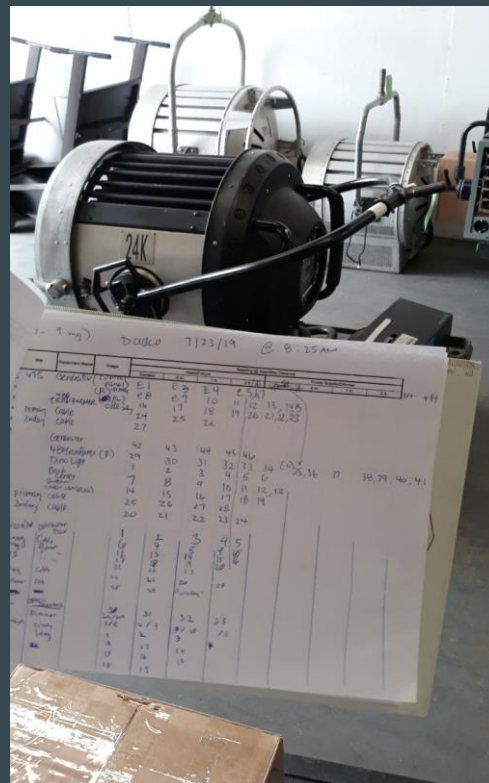
- Survey
- Source monitoring
 - Controlled environment
- Area monitoring
 - Real-time measurements
- Personal monitoring
 - Time-period



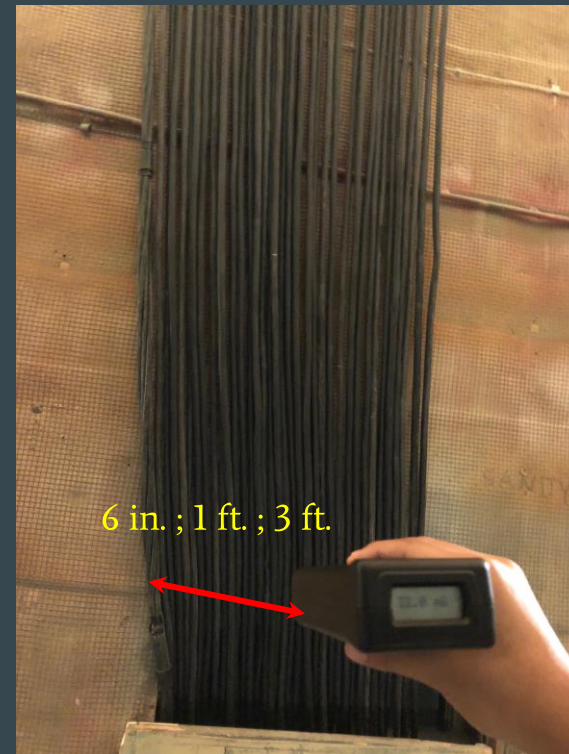
Methods



Controlled environment
measurements, DADCO

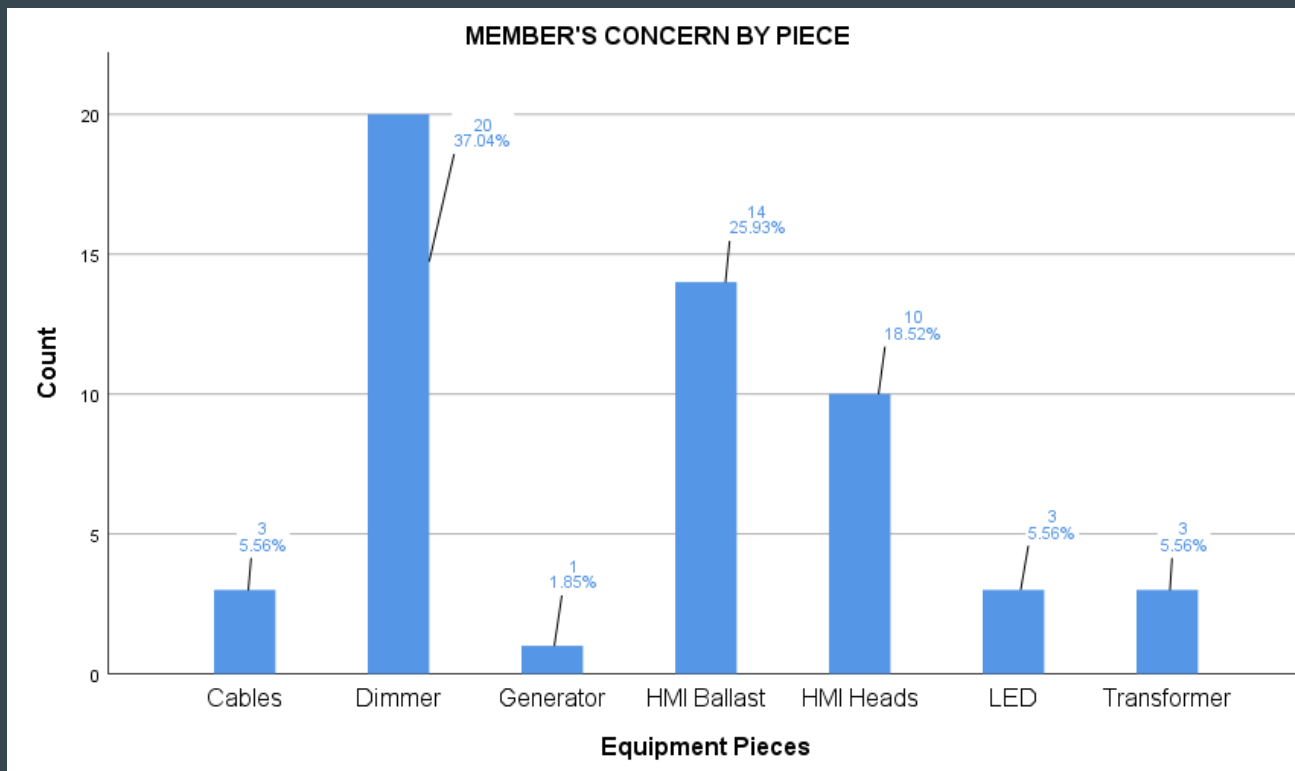


Data collection sheet

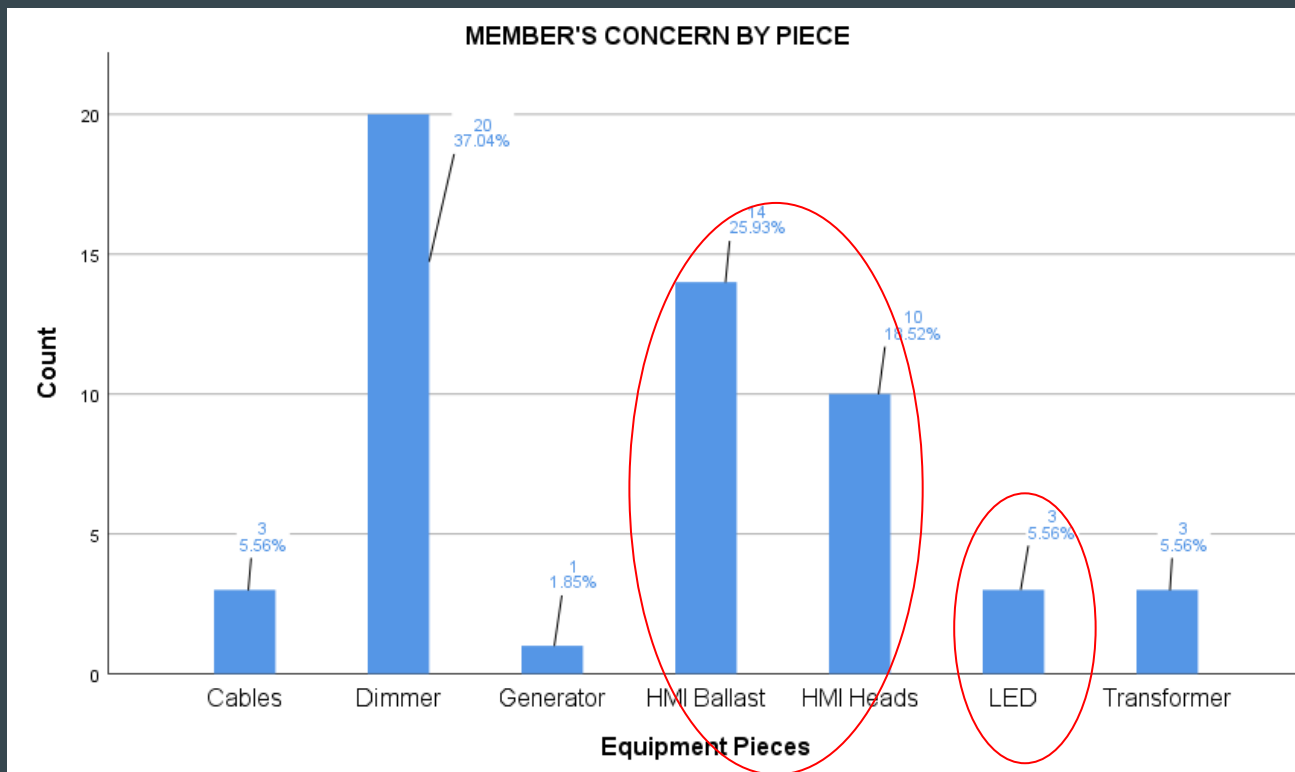


Waterfall

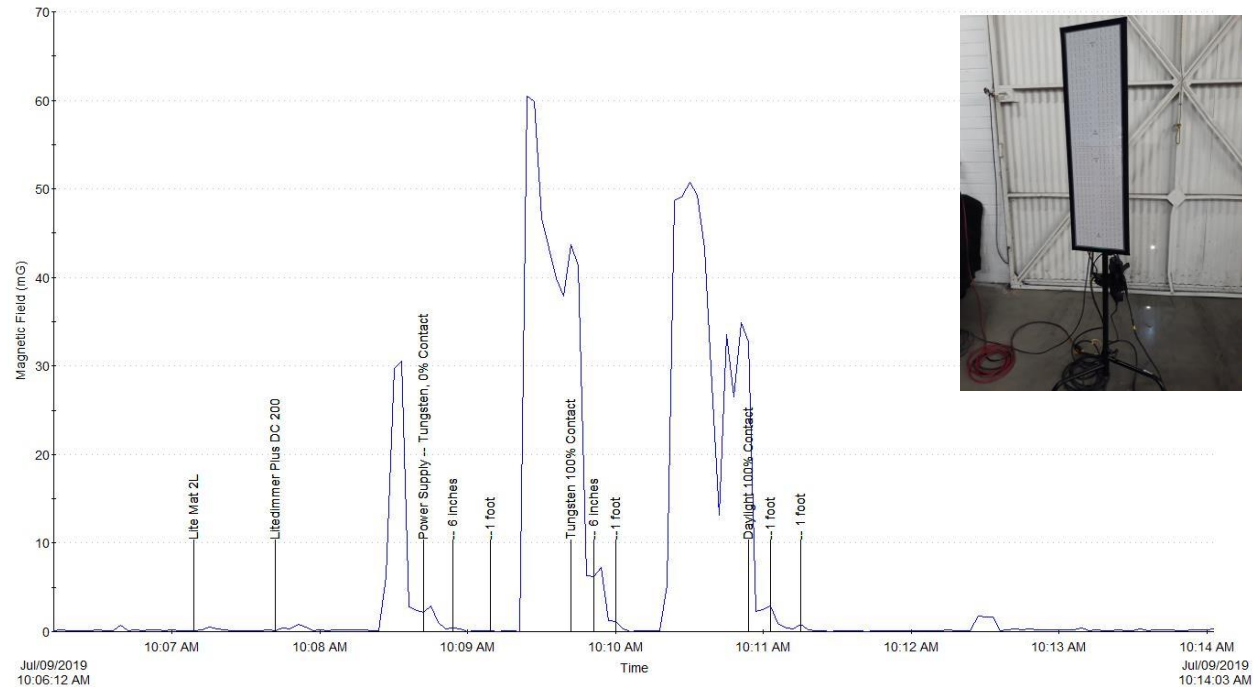
Results



Results

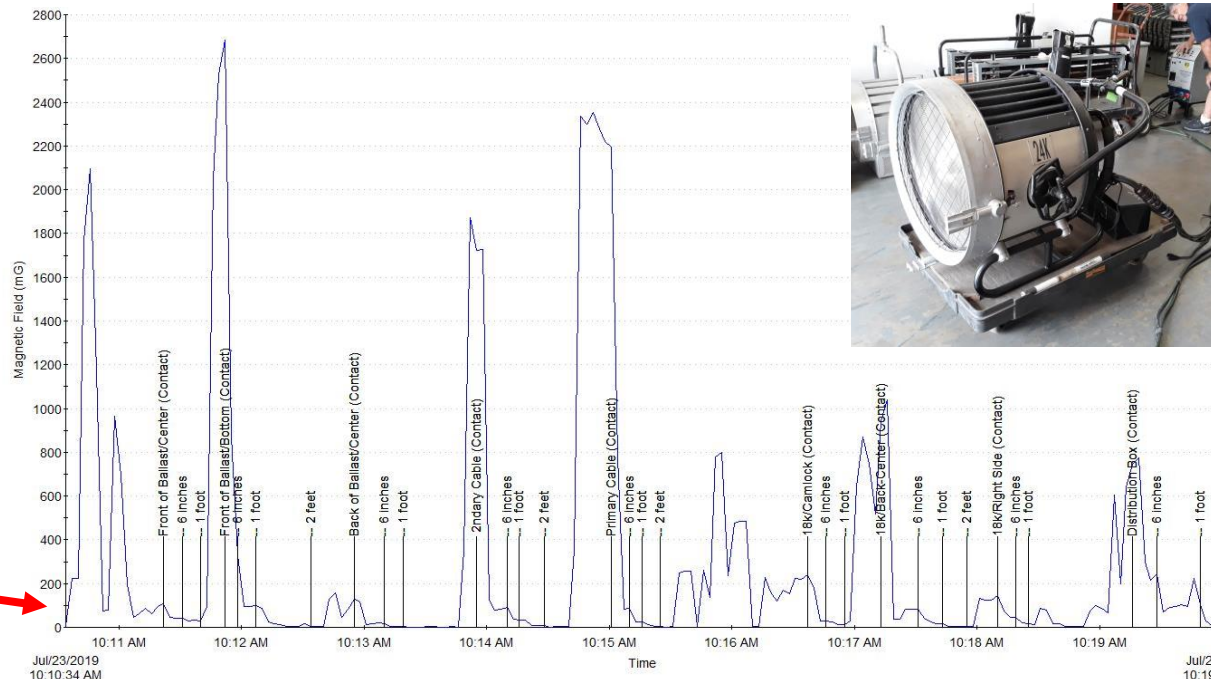


Results



C:\Program Files (x86)\Enertech Consultants\EMCALC 2013\Data\Litegear 7_9_19\LiteMat2L_LitedimmerpulsDC200_Power.mbk

Results

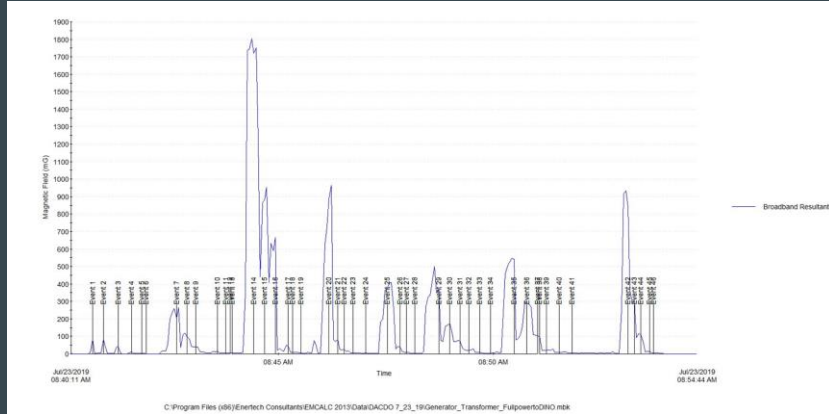


Give-Back Product (Factsheet)

- Outline of level of exposure for each piece of equipment monitored in controlled space
- Analysis of survey results to address direct concerns of IATSE Local 728 union members
- Qualitative insights from our “live” measurements on set

Challenges

- Nature of the occupation
- Metering
 - Consistency of reading
 - Software



Successes

- Experience behind-the-scenes work
- Community/member engagement
- Developed new perspective



Personal Reflection

Acknowledgments



Alan Rowe
(President)

Greg Reeves
(Vice President)

Charlie McIntyre
(Member)



Thank You