SEMINAR 301 PART 3

**Neon Sign Fire Prevention**
Litigation and How to Prevent it
Exposure
Insurance Requirements
Legal Aspects
Prevention



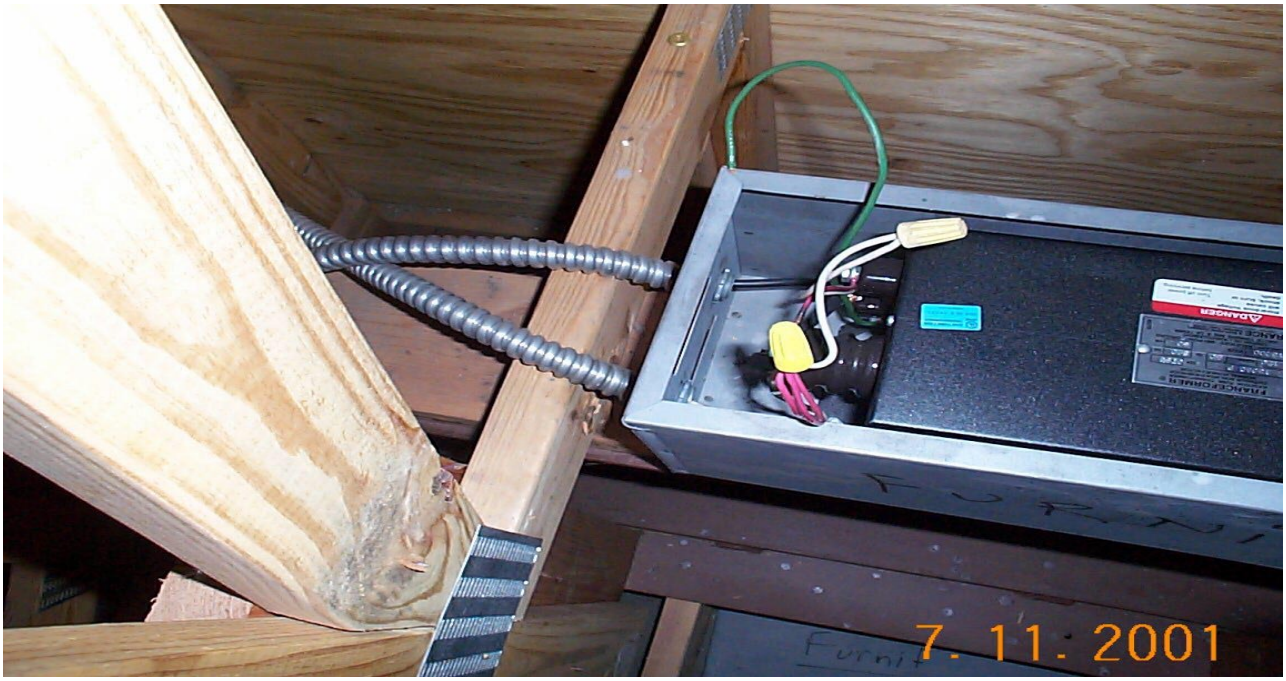
HOW DO YOU BECOME INVOLVED

## Exposure:

Any company or person involved, in any portion of the design, manufacture, installation or service of an electric or neon sign; which is determined to be either at the point of origin or linked to a fire causing injury, loss of business income, inventory or product loss, or significant building damage or total loss, will be included.

Cause to become involved.

Ever seen this before?




## Poor Workmanship Identified
## Exposure

Simple omission of not returning the wires in the box and leaving the cover off the transformer box implicates poor workmanship on your part and the jury would relate this to all the work you performed on the project.

## Deep Pockets Concept
## Exposure

Most States have a Statute which allows an involved party (YOU) to be completely responsible for the claim even if you were only 1% responsible.
Remember most politicians are from the legal community. (Tort reform is not likely)

Do you think your insurance coverage would cover this?
It was over 15 Million last time I checked


## Insurance Protection:

1. Contact your insurance agent
2. Make sure you have sufficient coverage limits.(Umbrella if needed)
3. Completed operations coverage (This will cover you after the installation)

## Insurance Protection:

Require your agent to write you a letter that you are adequately covered.
(This along with your piece of mind will include his/her liability coverage if anything was missed)

## Insurance Protection:

Check you personal protection.
Make sure your personal assets are protected.

## Legal Aspects:

1. Meet with your company lawyer.
2. Ask him/her if they do this type of litigation or defense work.
3. Once you find the correct person invest in a few hours and have them explain your exposure.

## Legal Aspects:

1. Defense costs
2. Smoke and Water Damage
3. Building replacement costs
4. Business Loss, fire section and all related structures.
5. Damaged inventory, all related.

## Legal Aspects:

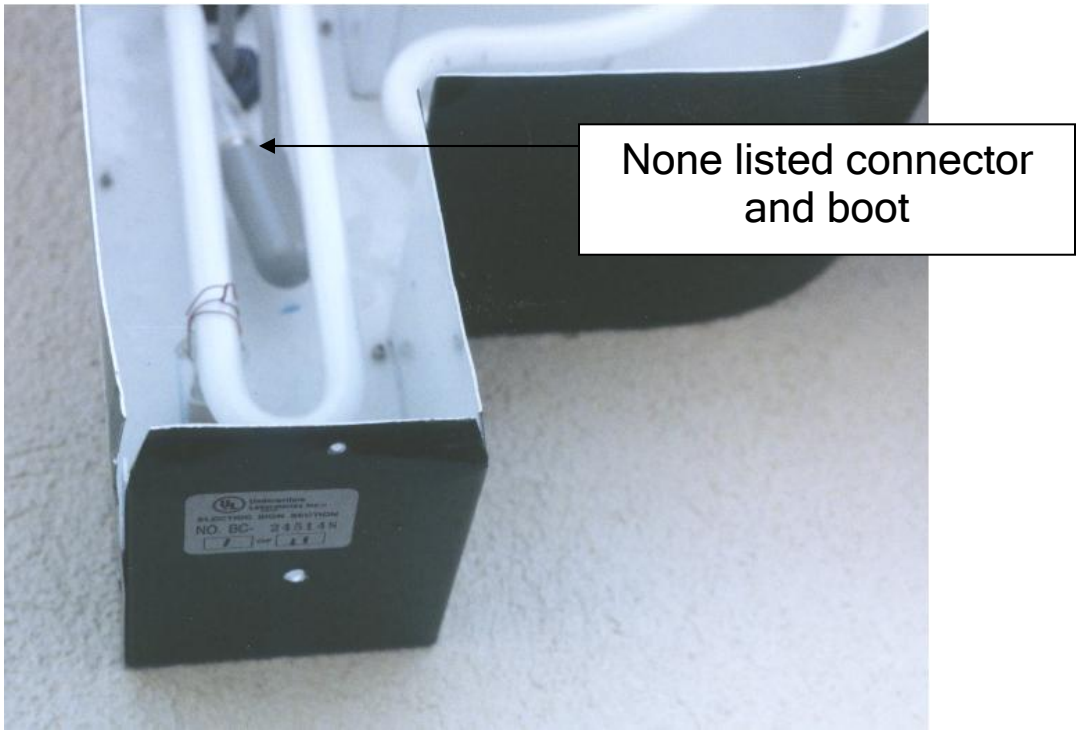
Have your letters, contracts and documents for sub contractors reviewed.
Always notify customers in writing, especially about outages.

## Prevention:

1. Knowledge and Training
2. Invest in your employees
3. Know your products and their applications
4. Use only products suitable for the application
5. Always follow " Conditions of Acceptability"

Trouble doesn't start until a fault occurs; hence the reason for Secondary-Circuit Ground Fault Protection.

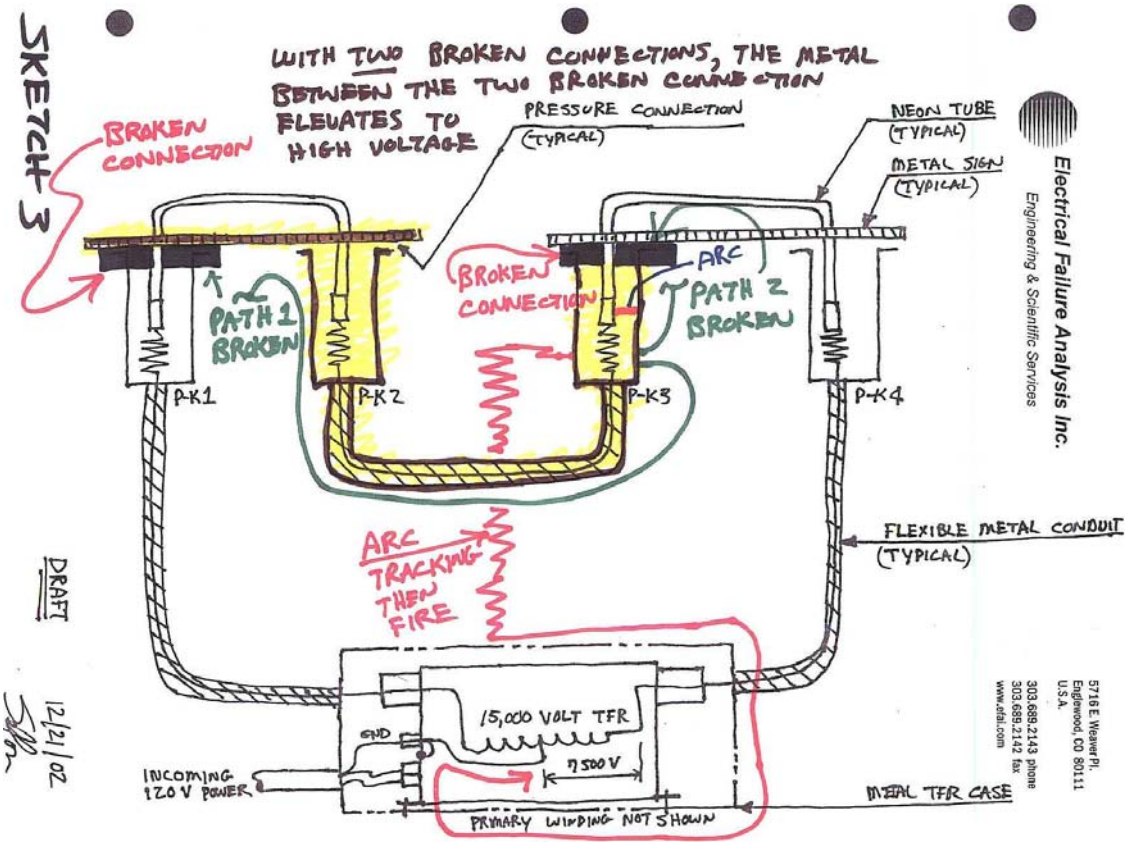
How do we start fires with neon in Listed Signs



# How do we start fires with neon

Rear of wall

Front of wall



## How do we start fires with neon?

- #1 Cause of Fires?  Lack of or inadequate Grounding and Bonding.
- Lack of maintenance & Non-repair of outages.
- Using damp location parts in a wet location.
- Components mismatched
- Not spacing non metallic conduits from ground/bonding
- Using low voltage components in a high voltage application.

## How do we start fires with neon?

# How do we start fires with neon?

**Bonding was not used; during a fault the aluminum roofing material became the ground / bond. The roofing material caused the capacitance coupling which destroyed the non metallic parts.**

## How do we start fires with neon?

- Non Listed or Recognized products used
- Not installing products per their “Conditions of Acceptability”
- Not using the complete system Listed for wet locations
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- Not installing products per their “Conditions of Acceptability”
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# How do we start fires with neon?
# In Listed Signs

Exposed wire and connection without boot

None Listed connector (For the purpose)

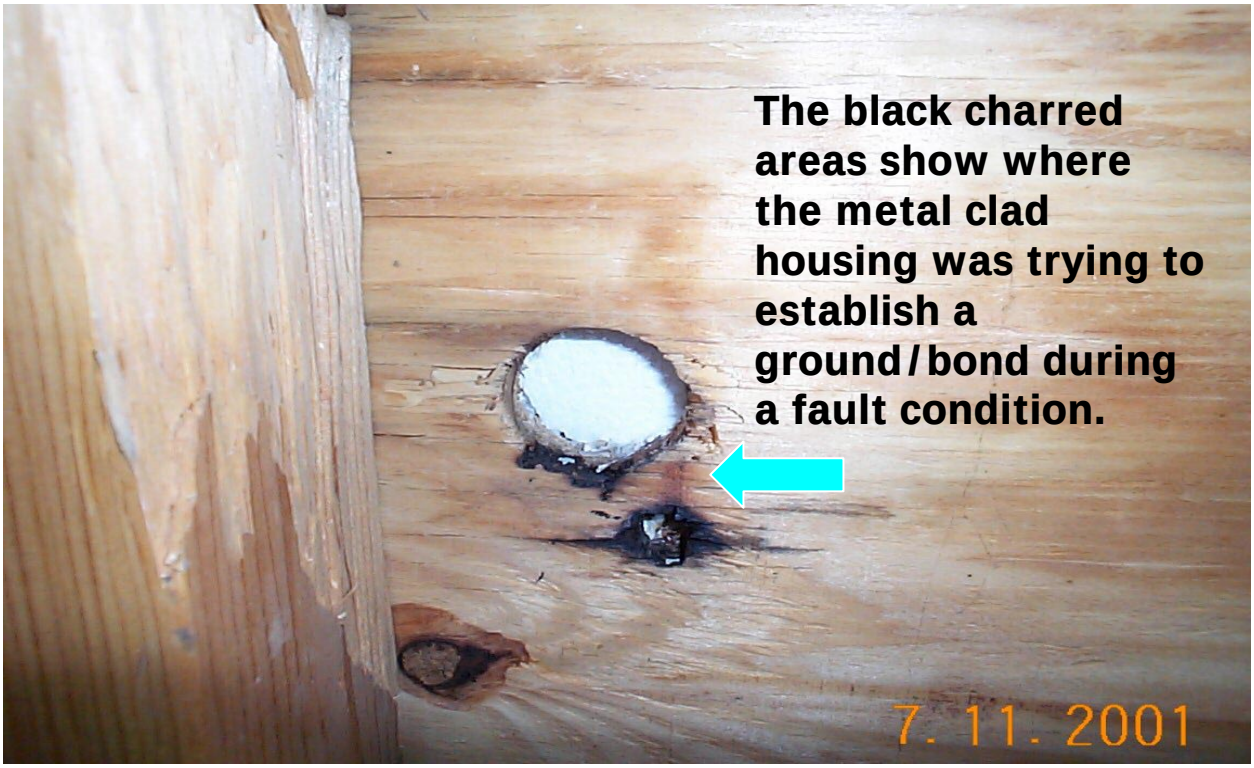
No Listed boot

# Poor Workmanship


Poor Workmanship

The missing connector is another example of poor workmanship. This also creates a break in the ground/bonding of the circuit. As shown in the next photo could be the cause and origin of the Fire.

# Result of Poor Workmanship




Result

# Point of Origin


## Common Installation Problems:

Material and products mismatched
Wiring and inner-connects not pre-assembled
Power supply loading has not taken into account; the job site problems and additional resistance encountered
Primary voltage not consistent between daylight and evening hours (Harmonics)-(208 voltages)
Access and adequate work space not provided
Not proper grounding or bonding
Common Installation Practices Using a Systems Approach
Glass cup and conduit plug assembly
Metal clad electrode receptacles with hi-volt connections or take up boxes
Listed sleeving and boot assembly

## Common Installation using a Systems Approach:

G Cup and CPA assembly

Listed for Wet Locations

## Bonding and Grounding:

As shown in the next slide bonding is a critical part of any high voltage installation

The bonding must be complete and include all dead metal parts

Failure to do so will require the circuit to make its own connection


**Equipment grounding conductors need to be complete. The above picture demonstrates the fault current will make the connection by itself if not complete. The metal clad housing were never bonded together.**

KNOW YOUR CURRENT:

- Line Voltage (Always Current Carrying)
- Return- Neutral-Grounded (Current Carrying or 0 Potential)
- Grounding-Bonding (0 Potential )

KNOW YOUR TERMS:

- Line Voltage 120-240-277
- Grounded - Neutral (Return)
- Grounding (All dead metal)
- Bonding (The means of connection)

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