

NANO-CLEAR INDUSTRIAL COATING FOR OXIDIZED ELECTRIC COOPERATIVE ASSETS



Horry Electric Cooperative Conway, SC

Industrial Customer:

Horry Electric Cooperative

Project:

Fortify oxidized paint on light poles/posts, junction boxes and transformer enclosures that had oxidized paint and coating degradation.

Project Location:

Conway, SC

Applicator:

Transformer Maintenances Services
from North Carolina

Coating Formulation:

Nano-Clear Industrial (NCI) coating

Application System:

Commercial spray gun

Date:

Application: November 2015

Conditions:

45F (average), sunny



PROJECT OVERVIEW:

Horry Electric Cooperative wanted to test **NCI** on the decorative light pole, junction box and transformer enclosures to extend the paint/coating protection and save money in maintaining the asset. The objective is to eliminate one painting maintenance cycle – saving the significant maintenance dollars required for prepping and re-painting the various assets will more than pay for the **NCI**.

Coating Formulation:

NCI - a crystal clear, aliphatic, moisture cured, one component polyurethane/polyurea hybrid formulation with extreme cross-link density for UV, chemical and abrasion resistance.

NCI is formulated to penetrate and fortify *existing* paint systems (newly painted or highly oxidized), not replace them.

Applications:

Junction boxes, transformer enclosures, light poles/posts, doors, facilities, fences (metal and wood), above ground storage tanks, equipment, bridge rails and signs that have degraded paint/coatings from UV, chemical and abrasion forces.

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CURRENT SITUATION:

Nano-Clear Industrial (NCI) coating was applied to an oxidized metal decorative light pole at Century 21 Realty in North Myrtle Beach, SC. The paint on the Bishops Crook decorative light pole had become oxidized from the sun and degraded by weather. The protection from the paint was beginning to fail.

Maintenance is a significant portion of any activities' budget in terms of materials and labor. Industrial Solutions USA proposed **NCI** as an effective product to extend the protection of the coop's assets and eliminate the cost of at least one re-painting maintenance cycle.

Horry Electric Cooperative had customers with assets that had become oxidized from UV and degraded by exposure to the weather.

The oxidized paint film was intact with some areas where the epoxy paint had begun to ablate.

Aromatic paint systems need help to achieve the years of protection required by asset



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ISUSA SOLUTION:

NCI is formulated to penetrate and fortify existing oxidized, weathered paint systems.

NCI is new cross linking formulation technology. This cross linking creates a “tough” coating that combines with existing paint systems forming a long lasting protection solution.

NCI chemically bonds to the paint with adhesion promoters and also bonds mechanically by penetrating into the porosity of the underlying coating.



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APPLICATION:

Preparation:

- The surface should be washed with a biodegradable detergent (at a concentration recommended by the manufacturer) and water using a soft/medium bristle brush.
- Then the surface should be rinsed with water using a pressure washer and/or sponge.
- The asset should be allowed to dry – air, wiped with a clean rag or blown dry with a leaf blower.
- The asset does not need to be media blasted or wire brushed.
- Once the existing paint/coating on the asset is dry, it was ready for application.

Application:

The application of **NCI** was done with a commercial sprayer. This is usually an airless sprayer or HVLP spray gun. Mohair paint rollers can be used.

- In general, coat a section of the existing paint with **NCI**, ensuring all areas of the painted surface are thoroughly coated.
- Then coat an adjacent section.
- Go back to the previous coated section and apply another coat of **NCI** spraying in a cross-hatch direction.
- Once an acceptable finish is obtained stop applying the **NCI** and allow it to “level”. Because of the low viscosity of **NCI** (40cps) the finish will “level” out.
- Apply the **NCI** from the top of the asset working down to the bottom.
- It is important to watch the previous section you have applied the **NCI** to because on oxidized paint surfaces the **NCI** will absorb into the oxidized paint at different rates. When areas absorb more of the **NCI** than other areas simply go back and apply another light coat of **NCI** to even the finish.



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Junction Box (30 years old, front).
Elmhurst subdivision in Conway, SC



NANO-CLEAR INDUSTRIAL COATING FOR OXIDIZED ELECTRIC COOPERATIVE ASSETS

Junction Box (30 years old, back).

A green Scotch-Brite pad was used to remove the pink oxidation on two sides of the box top prior to applying the Nano-Clear Industrial coating.



NANO-CLEAR INDUSTRIAL COATING FOR OXIDIZED ELECTRIC COOPERATIVE ASSETS

Transformer Enclosure

Elmhurst subdivision in Conway, SC



ABOVE GROUND STORAGE TANK PROTECTION

Transformer Enclosure

Elmhurst subdivision in Conway, SC



ABOVE GROUND STORAGE TANK PROTECTION

SUMMARY & CONCLUSION:

NCI was applied to a metal decorative light pole and several enclosures that had highly oxidized paint/coating.

The substrate preparation prior to application of **NCI** was minimal – wash the asset with biodegradable detergent (at a concentration recommended by the manufacturer), rinse with clean water and a sponge. Where the oxidized paint has begun to ablate, a Scotch-Brite pad was used to remove the loose material. The assets were allowed to dry before the Nano-Clear was applied.

NCI penetrated the paint/coating system and fortified it with superior physical properties – much better physical properties than the original paint/coating alone.

The combined **NCI**/paint coating system extends the protection of the light pole and enclosures for many more years saving at least one re-painting maintenance cycle costs.

NCI does not replace paint systems - **NCI** is the economical solution *to extend the performance life* of paint systems.

NCI Saves Money:

- Prevents pre-mature paint failures
- Eliminates substrate preparation required for new paint
- Eliminates labor for same
- Saves primer and paint material costs
- Saves labor for same



CALL TO ACTION:

Inspect the light pole and enclosures every 12 months.

Industrial Solutions USA is asking Horry Electric Cooperative to implement the application of **NCI** on oxidized city assets including light poles, enclosures, exterior doors, railings, aboveground storage tanks, equipment, trucks and bridges.

Incorporating **NCI** into the Horry Electric Cooperative maintenance protocol will extend the service life of all assets and save significant money over the current paint system(s) alone.

**Industrial Solutions USA develops and sells “tough”
ELASTOMERIC COATINGS & LININGS
to help industrial customers protect their assets from
corrosion, UV, chemicals and abrasion**