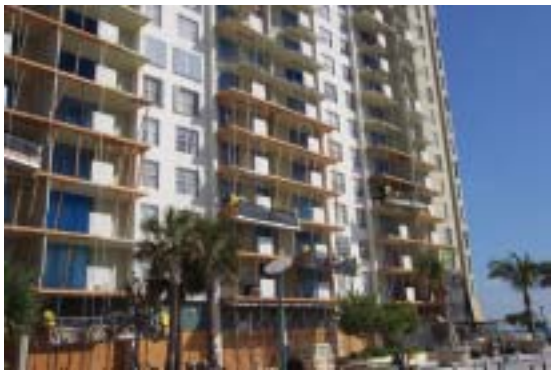
CP installation under way at historic hotel site

The successor to one of Miami Beach, Florida's most historic hotels is receiving its first cathodic protection (CP) system.

After opening its doors in January 1926, the original Roney Palace hotel in Miami Beach's South Beach district welcomed scores of notable guests including the Duke and Duchess of Windsor, actors Orson Welles and Rita Hayworth, and radio commentator Walter Winchell. The luxurious facility had the distinction of being the first hotel on Miami Beach to offer cabanas, tennis, and a nine-hole golf course. After four decades of exposure to the marine environment, however, the structure was demolished in 1968. A second structure, the Roney Plaza, was built at the site and has been in operation as a hotel and condominium complex since 1971. In recent years, corrosion in the reinforced concrete in the balconies had developed to the point where either the concrete would need to be repaired or the balconies would need to be removed altogether. As they had done periodically in the previous 3 decades, the facility's management selected the former option. This time, however, they would also have a CP system installed to prevent such damage from recurring at the oceanfront property.



A new CP system is being installed on the balconies of Miami Beach's Roney Palace hotel and condominium complex. Photo courtesy of MATCOR, Inc.

"Other techniques for restoring the concrete, such as extensive excavation and sealing, are very costly while only providing a life expectancy of 5 to 6 years," says Jim Emory, President of Cathodic Protection Technology (Cocoa Beach, Florida). Emory's company and MATCOR, Inc. (Doylestown, Pennsylvania) are partnering on the Roney Palace project under the supervision of B.P. Taurinski Structural Engineers (Boca Raton, Florida). The estimated $10 million project includes concrete repairs, painting, new railings, and CP. The scheduled completion is January 2005. The entire project will cover more than 125,000 ft² (11,613 m²) of concrete and approximately 900 balconies. The hotel and condominiums will remain open for the duration of the project.

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The CP system uses MATCOR's CPBD-III† conductive coating system, which is being applied to the floor side of the entire concrete surface and contains a precious metal anode. A final cosmetic, traffic-bearing topcoat will be applied as well. The anticipated service life of the CP system is 25 years. "The installation is faster than other alternatives and allows the building to remain open during the project," concludes MATCOR President William R. Schutt.

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—M.V. Veazey

†Trade name.

Continued from MP *Forum, page 10. The following NCN items relate to cathodic & anodic protection.*

Please be advised that the items are not peer-reviewed, and opinions and suggestions or recommendations are entirely those of the inquirers and respondents. NACE does not guarantee the accuracy of the technical solutions discussed. MP *welcomes additional responses to these items. They may be edited for clarity.*

New and old pipes in parallel

Q One of my clients is concerned about laying a new well-coated pipeline in the same corridor with an old pipeline. I do not think that there will be any problem because both lines will be protected by a common impressed current system remote groundbed. The old line is 18-in. (46 cm) asphalt-coated while the new line will be 12 in. (30 cm) with three layers of polyethylene over fusion-bonded epoxy. Separation between lines is 5 ft (1.5 m).

A I wouldn't expect any problems. It is pretty common to use existing pipeline rights-of-way for new pipelines. As I recall, the gist of the matter was that the old, poorly coated line will "take" more current because it has more bare surface and less dielectric strength than the new pipe. Conversely, the new pipe won't need much current and can be easily protected.

A I know that a lot of survey work has been done on pipeline corridors using the direct current voltage gradient (DCVG) technique to detect coating defects on the individual pipelines. An accurate individual pipeline location is essential for good results. If you have the choice, keep the well-coated new pipelines electrically separate and electrically remote from the old pipeline and its groundbeds. If you have to install the new pipeline in the same corridor as the old one, make sure both pipelines are bonded together at all locations where stray current corrosion is considered a risk.

A It is most likely that there will be no major problems in providing cathodic protection (CP) for both lines under the conditions you mentioned; there will be somewhat of a problem in interpreting corrosion control surveys, however, as the presence of one pipeline in close proximity to another will influence the readings on both lines. The coating on the "old" line most likely will not be of the quality of the coating on the new line; therefore, the presence of holidays and/or major areas of disbonded coating on the old pipeline will show up as areas of low pipe-to-soil potential on the new pipeline. I have seen many cases of this, and it is almost a given that the potential curves on one pipeline will follow exactly the curves on the other—with differing potential values, of course.

A The situation has the potential to create confusion while interpreting the coating survey data (i.e., close-interval survey, DCVG, etc.). To make conclusive decisions one may have to excavate both of the pipelines and physically verify the exact lo-

cation and severity of the coating defect. This may not be a cost-effective option.

On the other hand, if the new pipeline actually develops an external coating defect, that defect may be camouflaged by the known large defects of the old pipeline. Such coating defects may remain undetected until an in-line inspection such as intelligent pigging picks up some external metal loss on the pipe. As we know from experience, we cannot discount the possibility of an outage of a well-designed and installed CP station caused by power supply or groundbed failure for a considerable amount of time during its operational period.

In this type of situation, I prefer laying the new pipeline on the other side of the right-of-way or the road—with min. 15 m space in between. Design the joint CP scheme in such a way that the new pipeline can be electrically isolated from the existing old pipeline by disconnecting it at aboveground bond boxes.

AI also recommend installing a facility to allow direct/resistive bonding between the old and new pipelines along the route at a minimum of 5-km intervals (or even less, depending on the old pipeline coating defects).

AProvided that your pipelines are bonded together to the same CP system and there is no stray interference concentrated on one of the lines, you are quite right. There should be no problem. This type of CP design is very common, and I have designed systems for dual old/new pipes that are running without problems 20 years later. Unprotected "old" lines generally are cathodic to "new" lines and you must ensure that there are no bonded areas that are not protected.

AJust one more detail: the bond between the lines must include a variable resistor to adjust how much current goes from one to the other. Remember that the old pipeline will need much more current than the new one. *MP*