



THE WORLD'S LEADING SUPPLIER OF HEAT RECOVERY STEAM GENERATORS

Nooter/Eriksen
Aftermarket Services

Coil Replacement Project – August 2009 – Argentina



After approximately 10 years of service, a power producer with a **Nooter/Eriksen** HRSG had begun experiencing numerous failures in their LP Evaporator coils. The coils were originally fabricated using carbon steel tubes. This material combined with improper water chemistry led to the occurrence of Flow Accelerated Corrosion (FAC), the root cause of the failures. Temporary repairs were made by a local contractor which eventually caused additional failures and the need to replace the coils. **Nooter/Eriksen Aftermarket Services** designed and supplied new LP Evaporator coils utilizing T11 tubes to provide a design more resistant to FAC. **Nooter/Eriksen** also assisted the plant with recommendations for their water chemistry program to bring it in line with current standards and further reduce the probability of recurring FAC issues.

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HEAT RECOVERY STEAM GENERATORS

Nooter/Eriksen Aftermarket Services



Special consideration was needed for the installation of the new LP Evaporators due to the coils being part of a larger bundle and spatial constraints on site. These problems were addressed by **Nooter/Eriksen** providing a detailed procedure to remove the old coils and install the new coils through the HRSG sidewall utilizing a trolley system. This allowed for the work to be completed in a brief outage with minimal alterations required to the overall plant. A **Nooter/Eriksen** Field Technical Advisor was present during the outage to aid with the procedure and to assist with any possible issues. The project was successfully completed in August 2009.

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After operating for 10 years, a cogeneration plant with a single **Nooter/Eriksen** HRSG servicing a refinery had begun experiencing multiple tube leaks in their HP Economizer Coils. The cause of the leaks was determined to be under-deposit corrosion due to iron deposits. The feedwater quality could not be addressed directly as it is supplied by the refinery and is beyond the control of the HRSG operators.

As leaks continued to occur, the tubes had to be removed and plugged. The plugging reached a point where approximately 25 tubes had been removed and HP Economizer performance reduction was significant. The increased frequency of the leaks also led to forced outages

and reduced overall plant reliability. **Nooter/Eriksen Aftermarket Services** was contacted to design and supply replacement coils to address the ever growing issue. New HP Economizer coils utilizing Duplex stainless steel materials were designed and fabricated to better withstand the feedwater conditions.

The HP Economizer coils were supplied bundled with a portion of an HP Evaporator for ease of installation and reduced outage time. A detailed installation procedure was provided to minimize the amount of HRSG alterations that had to be made for the installation and also minimize the outage time. A **Nooter/Eriksen** Field Technical Advisor was sent to the job site during the outage to oversee the installation and assist with any challenges. The tight refinery layout created some unique challenges with spatial constraints and positioning of the cranes. **Nooter/Eriksen** further assisted the plant by reviewing their overall water chemistry and operation procedures to address their specific issues. The coils were successfully installed in June 2010.

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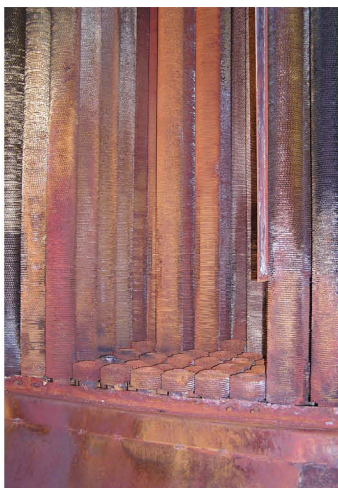
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Value Proposition

We provide a cost effective approach in supplying custom designed heat recovery steam generators (HRSGs) with the highest quality and innovative engineering solutions to meet the requirements of our clients while continuing to build our customer relationships through trust, integrity, and successfully executed projects.

Vision-To be our “Customers Preferred Choice”

Nooter/Eriksen is committed to supporting the maintenance and operation of our customer’s HRSGs. Its experienced commitment to quality is available 24 hours a day, 7 days a week to support its customers’ maintenance, repair, and operation of their HRSGs for maximum reliability. With over 50 years of boiler fabrication and installation experience, and over 400 HRSGs supplied worldwide, **Nooter/Eriksen** has the expertise and technology to provide aftermarket services tailored to meet the customers’ requirements.

To learn more about the scope and depth of **Nooter/Eriksen’s Aftermarket Services**, please call 636-651-1400 or go to www.ne.com.

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