

safety **POWER** News for March 2010

Welcome to this issue of the Safety Power News. Safety Power is Canada's largest provider of environmental solutions for large scale diesel and natural gas standby generators. In this issue we focus on a recent project for a major financial institution and on information related to emissions systems for large scale generators. We hope you enjoy the articles. As always your feedback is most welcome - Bob Stelzer, Chairman, Safety Power Inc bob.stelzer@safetypower.ca . More info is also available at www.safetypower.ca

New Projects – Major Financial Data Center

Safety Power has just commissioned a new installation of 3 Selective Catalytic Reduction (SCR) systems at a major financial corporation's data center. For security reasons the name of the corporation and the location of the data center cannot be released. Safety Power's system provides emissions control for 3 MTU 16V4000 G43 diesel powered generator sets. Each generator set is capable of producing 2MW of electrical power at full load. Safety Power has 4 units at another data center for this same financial corporation which was installed a few years ago. "We are very pleased to be able to continue our relationship with this important customer", says Robert Desnoyers, President of Safety Power.



The Safety Power system met its design target of 90% reduction of NOx across a broad load range for each generator. These results make the system compliant with the current requirements of Ministry of Environment EBR 010-2463. In addition to dramatically reducing the NOx emissions, noise and visible particulates are also significantly reduced.

Ernie Arriesgado is CIM Project Co-ordinator for Harper Power Products, the engine supplier, "We were pleased with the support that Safety Power provided for the project. The installation and start up of their equipment went very smoothly."



Emissions technology interview with Bob Charlton

Bob Charlton is the Engineering Director of Safety Power, a position he has held for the last 4 years. Bob has extensive experience in the process industries and has led project teams on many global projects. He is a recognized expert in advanced process control. Bob is committed to having a positive impact on the environment and prides himself on bringing a combination of practical experience and engineering discipline to his role. He is an ardent sailor and enjoys gardening. We talked to Bob about some of the issues he feels would be of interest to our readers.

Q: What are some of the trends that you see related to diesel and natural gas driven generator emissions systems?

We are seeing changes that can be grouped into 2 major sectors: technology driven trends and regulatory driven trends.

The technology driven trends relate to more effective use of the basic building blocks which go into these systems. This means increasing the use of Computational Fluid Dynamics to optimize the systems from a size and cost standpoint. It also means the increased use of model based control algorithms to achieve ever higher levels of emissions reductions. We currently have projects on the design table which have target emissions reductions exceeding 95%. These targets cannot be achieved without highly effective technology. With increased emissions reductions we are also seeing a requirement to clearly validate the performance of the equipment. As a result it is becoming increasingly necessary to have remote monitoring so that the performance of the equipment can be validated on a 7/24 basis.

Of course, regulatory driven trends vary by jurisdiction. In Ontario new targets were established through EBR 010-2463 that specify NOx, Particulate Matter (PM) and Carbon Monoxide (CO) limits for reciprocating engines used to produce electricity for non-emergency use. The new targets can be achieved in a very cost effective manner as a result of the technology driven trends mentioned above. Many facilities, such as data centres, water treatment facilities and hospitals, are choosing to meet the targets outlined in EBR 010-2463 even if they do not have the intention of generating electricity for non-emergency use. Another Ontario based trend relates to the seismic requirements outlined in the Ontario Building Code. Many critical installations (especially data centres and hospitals) are specifying that the installed systems meet Ontario Building Code (2006) section 4.1.8. "Earthquake Load and Effects" and in particular section 4.1.8.17, "Elements of Structures, Non-Structural Components and Equipment".

Q: What are some of the factors that are important to customers of your systems?

The factors vary depending on the lifecycle of the project. At installation and commissioning time the key factors are meeting the cost, schedule and environmental performance targets in a manner which integrates smoothly with the overall project. Once the project is completed a key factor becomes effective support and regular maintenance of the system.

Q: What types of air emissions issues does Safety Power Inc (SPI) deal with?

We deal with all of the traditional by-products of combustion: CO, NOx, Particulate Matter (PM) and unburned HydroCarbons (HC's). We offer 3 technologies to deal with these emissions. These include NOx reduction (through our Selective Catalytic Reduction system), CO and HC reduction (using our oxidation catalyst) and finally PM reduction (through our particulate filter). Most of our installations focus on the NOx, CO and HC reduction by installing the SCR and the Oxidation Catalyst. This system reduces PM and provides 90% reduction in HC, CO and NOx. The net effect on a diesel generator is that there is very little visible smoke, virtual elimination of unpleasant diesel smells and a significant noise reduction at the exhaust of about 25 dB.

For more information visit us at:

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