

in this ISSUE :

'designPLUS'

Your Mission Critical Newsletter

The 'designPLUS' Concept

A Necessity for Mission Critical Facilities

FEA Attends Spring 2001 7x24 Exchange Conference





www.feace.com

Fall 2001

Who We Are...

Facilities Engineering Associates (**FEA**) is a mid-sized, multi-disciplined, mechanical/electrical professional engineering firm specializing in redundant, highly reliable, mission critical facilities.

Founded in 1987, Facilities Engineering Associates has strived to develop an organization that provides highly personalized, technical services to Fortune 500 clients. We are the ideal size to handle any size project insuring senior management involvement in all aspects.

The logo for designPLUS is presented within a large black cross shape. The word "design" is written in a lowercase, white, sans-serif font inside a red rectangular box that is part of the cross's horizontal bar. The word "PLUS" is written in an uppercase, black, sans-serif font to the right of the red box, also within the horizontal bar.

'designPLUS'

Your Mission Critical Newsletter

Facilities Engineering Associates is entering its fifteenth year of providing mission critical design services. During that time, we have developed very specialized expertise in the design of utility systems in support of information technology, telecommunications and broadcast facilities. In order to keep our clients current with the latest trends in mission critical systems, we have decided to publish a newsletter highlighting new developments and information.

FEA has recently completed a major redesign of its marketing program. We have coined the word 'designPLUS' to describe our added services concerning equipment specification, extensive construction administration support, and

full systems integration testing. This being the cornerstone of our new marketing focus, we have named our newsletter 'designPLUS'.

We plan to publish designPLUS periodically with timely articles about mission critical design topics. The articles will cover mission critical areas of general interest, **FEA** accomplishments and 'lessons learned' while providing our designPLUS services during factory witness testing, start-up, and integration testing.

This month's general interest article reviews the Spring 2001 7x24 Exchange Conference with its emphasis on distributed generation. Some future articles include a discussion of 9's reliability and proposed environmental licensing changes for standby generators.

We hope you find designPLUS informative, useful and timely.

The 'designPLUS' Concept

A Necessity for Mission Critical Facilities

Typically, consulting engineering firms provide traditional services consisting of design and construction administration. Design development and detailed design result in a set of engineering documents used to specify the desired project. Construction administration usually provides for shop drawing review, addressing of construction issues and final punch lists. In the area of mission critical design, traditional services are only half of the picture. **FEA** feels that additional services are crucial to the operation and correct implementation of new designs into 7x24 facilities. It is these additional services that make up the essence of designPLUS. **FEA's** designPLUS combines traditional services with vital added services that ensure optimum results in meeting the client's business objectives and providing a truly 7x24 facility.

As Project Technical Manager, **FEA** provides the client with a single, coordinated team of architectural, environmental, structural, acoustical, and mechanical/electrical professionals. We assist in selection of all contractors and major equipment manufacturers. Our extensive project management experience and commitment

to the team approach helps ensure the most cost-effective and efficient project delivery system for meeting the budget and schedule.

DesignPLUS provides the client with detailed drawings, construction review services, and factory witness testing of major equipment to assure the equipment performs as specified. In addition to our involvement with equipment start-up, we develop test procedures and provide on-site coordination of the testing to ensure that the inter-relationship of the various pieces of equipment provides the intended functionality. Finally, we can also provide training, switching and valving procedures, operating manuals and maintenance procedures.

We believe that designPLUS makes sense to clients wishing to successfully design and build a state of the art 7x24 mission critical facility.

FEA Attends Spring 2001 7x24 Exchange Conference

Leo Soucy and Fran Escott attended the Spring 2001 7x24 Exchange Conference at The Grand Floridian in Orlando, Florida. The theme of the conference was End-To-End Reliability Vulnerabilities.

The keynote address was presented by Raymond G. Saleeby, President and CEO, Myutility, Inc. and was entitled 'End-to-End Vulnerabilities and Distributed Generation'. This keynote address truly set the tone of the conference, as everyone was interested in how and where co-generation fits into the power reliability environment. Mr. Saleeby gave an overview of the present power problem in California and what may occur throughout other areas of the United States. It quickly became apparent that demand was increasing quicker than supply. He also provided the following interesting statistics:

"...Department of Energy forecasts a total of 403,000 megaWatts of new capacity needed by 2020 in order to meet the capacity needed to meet growing demand and to replace retiring units...It is expected that distributed generation will have to address approximately 15 to 20 percent of new power requirements."

- Frost & Sullivan

"38% of existing power plants were built before 1965massive replacement needed." - R. Saleeby

"Transmission congestion is real and a solution is not at hand."

- R. Saleeby

The main emphasis was that the utility system's reliability would be marginal as the power producers convert from a regulated to a cost competitive business.

In this new power paradigm utilizing all available generation capacity will be a necessity. There will also be large incentives to self generate

which will manifest itself in how power is priced. We are already seeing this in existing rate schedules that are in affect in certain areas of the country.

Mr. Saleeby also presented information on the cost of downtime for numerous types of businesses showing the need for six nines reliability. It is not often that the cost of downtime is quantified in dollars.

<u>Business Type</u>	<u>Downtime hourly cost +/-</u>
Stock Brokerage Firm	\$6,000,000
Credit Card Services	2,500,000
Airline Reservation Services	75,000
Cellular Phone Services	40,000
Network Connection Services	30,000
Bank ATM Service Fees	15,000
Hospital	Priceless
<i>- R. Saleeby, Spring 2001 7x24 Exchange Conference</i>	

There were other sessions which covered, in detail, the various means of providing distributed generation (DG) including diesel generators, gas engines, turbines, wind power, fuel cells, co-generation systems and photo-voltaic. Although some of these are rather exotic, as time goes on, they should become much more feasible.

The importance of power reliability and quality, to many industries, was discussed. Mr. Saleeby gave an overview of how distributed generation could be configured with many different sources interconnected on the utility grid. Interconnection standardization will be required to provide lower cost and simpler solutions.

Another interesting session was by Tom Talleur, Managing Director, KPMG LLP, which dealt with

'Cyber-Crime and Litigation: Business Infrastructure Industries Risk'. The session dealt with the inherent liabilities of cyber-crime facing all businesses and how relatively easy it is to steal a company's intellectual property.

As always, the 7x24 Exchange conference was very informative. 7x24 Exchange is a technical society engaged in promoting the design,

construction and maintenance of utility systems in support of mission critical facilities. People involved in information technology, facilities and plant engineering, computer equipment manufacturing, consulting and mission critical equipment manufacturing attend the conferences. The attendees have primarily come from the data center environment but recently other industries including telecommunications, broadcast and manufacturers that have continuous processes (computer chip manufacturers, pharmaceutical, etc) have shown increased interest.

For more information concerning the 7x24 Exchange, you can contact Joe Paladino: Tel 914-835-5740
Web www.7x24exchange.com
Email: jpaladino@erols.com.

Distributed Generation (DG)

DG is coming ... But how fast? While some products are available now, we expect wider utilization of wind, micro-turbines, fuel cells, and other DG technologies within a few years.

DG can be integrated with the right equipment to provide UPS grade power with parallel generation and even heat recovery as an 'all-in-one' package.

DG must be installed properly or power quality/reliability could be made worse and utility distribution systems could face problems!

Contact Leo Soucy at **FEA** with any comments or questions.
Facilities Engineering Associates
128 Garden Street
Farmington, CT 06032
Tel. 860-677-2285
Email lsoucy@feace.com