



## Mid-South Engineering Company

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### Stationary Engine Concerns

By: Rob Bullen

Most plants contain at least two items that receive little attention until an emergency arises. These items are the Fire pumps (more specifically the diesel fire pump ) and the back-up generators. Most generators receive little attention, as today's controls allow for automated self test and start-up, and the units are only utilized during unforeseen power outages (other than scheduled system testing). Most plants utilize three pumps for the fire protection system: an electric jockey pump, and electric fire pump, and a diesel fire pump. The jockey pump is a much smaller unit, which maintains pipeline operating pressure. When the system pressure drops due to water usage, the electric pump is started, and typically supplies full system flow.

We are all familiar with the changing requirements for engines in cars and trucks, but these requirements also affect stationary power units at the plant sites. Typically, if an engine complied with the standards in effect at the time of it's installation, then there should be no modifications needed to accommodate new emissions standards. However, there are several exceptions to this statement.

If an engine is removed from service, and then returned to service, you MAY be required to meet the latest emission standards. There are many factors that come into play in answering the questions about "MAY." If the engine is moved and re-installed at another location, it may be classified as either an existing engine or new installation depending upon the service and the local regulations.

Whether you are modifying an existing installation, or considering a new installation, several concerns need to be addressed regarding code compliance. Each item is worthy of its own article, but just identifying the concerns and asking the initial questions can save a significant amount of time and money on the system installation. The following is a list of questions to ask to begin the process:

1. Is this going to be considered a new or existing installation?
2. What standards will be enforced regarding emissions?
3. Is this a point source, or will it be covered by other plant permits?
4. What fuel will be used (diesel, natural gas, propane, gasoline)?
5. What quantity of fuel will be required to be stored, indoors or outdoors? (depending on the fuel type and quantity, NFPA standards will vary for fuel storage requirements, fire protection, etc...)
6. Do you have proper emissions data for the engine (prior to purchase)?
7. Regardless of the emissions data, what certifications does the engine have (EPA Tier, CARB if applicable, UL and NFPA)?
8. How often and for how long will the engine be operated (including automated start-ups and testing)?
9. What classification and fire rating will apply to the engine enclosure?
10. What start-up documentation will be required?

While not comprehensive, the answers to the question on this list will give a basis for standards and regulations that need to be considered for a good design basis. These standards and/or regulations will include those from the EPA, NFPA, UL, IBC, IFC and other state and local agencies.



"The Barn" built in the 1930's to house Welsh ponies, serves as Mid-South's offices.

## Key Planning Points to a Successful Project

**Continued from previous issue** By: John Westerman

### 3. Get the plant personnel to buy in to the project and take ownership in it.

This item is most crucial as plant personnel will ultimately operate and maintain equipment implemented in the project. The last thing a project team wants is for the project to be implemented and that those left to operate the system have not taken ownership of the system. Some key points to consider here are:

- A. Does the plant personnel understand the benefits of the project and how they will help their work efforts and the company overall?
- B. Are the plant personnel being properly trained to operate and maintain the new equipment?
- C. Does the new equipment require new technology training for the plant personnel, and will that be in place prior to the equipment coming on line?
- D. Have maintenance access to the equipment been reviewed?

### 4. Keep Communication at the top of your list.

As with most any dealings, the better the communication, the better the dealings progress and the better each party understands their respective requirements. As projects are being implemented, regardless of the size of the project, there are some questions/areas that, if properly addressed with good communication, greatly enhance the success of a project. Below are some of them:

- A. Has the Owner properly conveyed the need and desired results to all involved in the project?
- B. Has the basis for the design been communicated properly for understanding for all parties involved?
- C. Is the Owner getting a fair comparison of the equipment and services offered by various vendors and contractors?
- D. Do the equipment vendors and construction contractors understand their overall requirements in implementing the project?

- E. Are the project team members keeping each other properly informed of items that could effect or change the direction that the project is heading?
- F. Are good records being kept to document changes that occur, and is that information being distributed properly?
- G. Are the right people being informed of the decisions that are being made?
- H. Are vendors and contractors working with the latest information that is available?

The above items can be communicated in various forms, but a good set of drawings and specifications as well as keeping good records of decisions that are made greatly help ensure that the requirements of the project are being communicated properly. Drawings and specifications should clearly define the work required for each respective party. Regular meetings or conference calls also aid the communication process, and having a distribution list that includes the key personnel involved in the project also goes a long way in keeping all necessary parties informed. Keeping the project team, vendors, and contractors properly informed is a must for a successful project and this takes effort and discipline by the responsible parties. Having the right people responsible for keeping the lines of communication flowing properly and making sure that project information is being distributed properly prove beneficial to all involved.

In our plus 40 years of work experience, Mid-South Engineering has helped many of its clients achieve successful project implementation and have learned from experience valuable aspects to keep projects on tract. If you are considering a potential project at your facility, we would be glad to help you in any stage from conception to implementation. We believe up front planning and planning for success are keys in making your next project successful.

#### Upcoming Participating Trade Shows:

MLMA – July 7-9, 2011 – Biloxi, MS  
SMLA – July 20-23, 2011 - Amelia Island, FL  
SFPA – August 11-12, 2011 – Atlanta, GA  
*Visit us at our booths*



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