



## Preventative Maintenance Optimization Program for Emergency Diesel Generators

In nuclear power stations, Emergency Diesel Generators (EDG) are vital for safety, ensuring the power supply to essential equipment during a loss of primary power. Because of their importance, the reliability of these generators needs to be very high, yet the diesel generators are standby equipment and operate only during demand and during surveillance checks. Maintaining EDG's effectively and affordably is our focus.

During commissioning and in the initial years of operation generators have encountered many problems. Preventative maintenance and surveillance testing provide assurance that plant safety requirements are adequately fulfilled. A key part of EDG reliability and availability improvement is a periodic review of the recommended maintenance activities to verify that they are still applicable.

GSE DP Engineering has created a new proven Preventative Maintenance (PM) Optimization Program that follows the Owner's Group's guidelines presently used. Adopting this program can save hundreds of thousands of dollars in recurring maintenance costs.

### A LIVING PROGRAM

Managed by specialized, professional EDG engineers, the GSE program guides client teams through the step-by-step process, evaluating past maintenance data to determine if the frequency or activity can be modified, reducing the burden and costs of future maintenance activities.

- As a living program, we continually measure the effectiveness of the maintenance plan. It is necessary to verify, through experience or physical part inspection, that the data monitoring/trending results accurately reflects actual engine conditions. Once that confidence is obtained, physical inspection requirements can be eliminated.
- Regular program reviews will consider the physical inspection data obtained by the owner and will provide the basis for continued modifications of the program as needed to serve as a living plan for continual improvement in EDG availability and reliability.
- The review of past and current findings for degradation, out of tolerance, and failure will determine which preventative maintenances (PMs) may be modified in frequency and activity description – ultimately to save time and money.



## OUR PROCESS

- We work with you to create a scope of review which could include findings for degradation, out of tolerance, failure, etc.
- We then conduct reviews of relevant Owner's Group Maintenance Program sections.
- GSE DP Engineering reviews documented performance, satisfactory, non-condemning and condemning conditions, degradation, failures, and notes any effect on the EDG systems' operational performance.
- We then perform an assessment that establishes a new requirement and basis for the scope and frequency of each PM.



## OPTIMIZATION BACKED BY EXPERIENCE

GSE DP understands the necessary basis and definitions used to review the historical maintenance inspection data and conditions of engines utilized as standby safety-related power sources. We leverage specialized, high-value industrial engineering design, project management, and implementation services to create agile, end-to-end solutions. Our experienced team includes:

- Primary review by an EDG-system engineer with more than 30 years of experience in consulting and design for upgrades and obsolescence
- Close ties with the Enterprise Owner's Group EOG, supporting positions and responses to industry and regulatory challenges
- Active support of the EPRI Joint Owner's Group meetings
- Contributor and reviewer for six EPRI guides on Emergency Diesel Generators
- EPRI EDG Tech Advisory Committee member and contributor
- Engineer of Choice
- Proven experience in maintenance optimization, single point vulnerability studies, and regulatory impacts

## OPTIMIZE YOUR SAVINGS

Proven results of our Preventative Maintenance Optimization Program for EDG allow us to forecast the expected return on investment and overall savings. Let us calculate your expected savings. We offer these examples to illustrate the compounding effect of maintenance savings year-over-year.

## ABOUT GSE DP ENGINEERING

As part of GSE Solutions group, GSE DP Engineering supports operational excellence in the power industry. As an Engineer-of-Choice (EOC) provider, we leverage specialized, high value industrial engineering, design and implementation to create end-to-end solutions that reduce risk and optimize performance.