LODESTAR CASE STUDY

6/23/2016

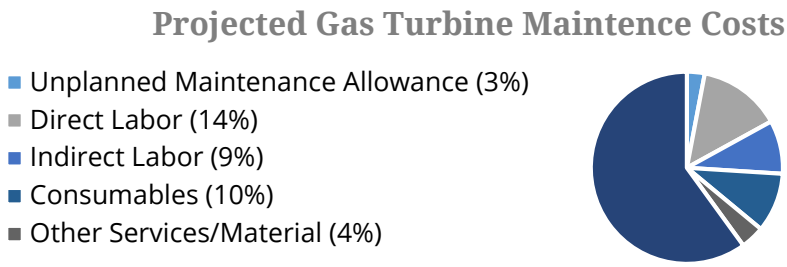
Life-cycle Parts Management Made Easy, Tractable and Cost Efficient

Lodestar™ software shines a light to guide turbine operators on parts management

SITUATION

A combined cycle generating facility located in Odessa, Texas struggled with parts life-cycle management for the natural gas-fired GE 7FAs located at the facility. Through changes in management and personnel, much of the parts data was not complete.

The bulk of the maintenance costs in turbine maintenance is in the scheduled maintenance, however, estimating what those costs will be has considerable risk without a database of the previous service and operating history that includes gas and liquid fired hours, peak fired hours, part load fired hours, failed starts, emergency stops, etc. – all of which need to be evaluated with Equivalent Operating Hours (EOH) or Factored Fired Hours (FFH).



CHALLENGE

Management needed the facility to become more efficient and standardized with accurately projected costs associated to parts management. The systems they had in place were woefully inadequate for these mandates; a new program needed to be found.

EXECUTION

The first step in the process involved the search for a software program that could deal with the myriad of challenges facing the operators when it came to life cycle management. Keeping track of what parts were in operation, in stock and what their useful life or condition was the most challenging issues.

Management's search of the marketplace found only one solution… Turbine Technology Service's Lodestar™. They quickly discovered that the software is a technical solution that gathers unprecedented amounts of data about parts and components. Their goal was to weave systems, data and people together to create parts management solutions that would increase performance across many levels.

The installation took a couple of weeks and had several steps in the process:

1. Definitions were established in a kick off meeting where the fleet configuration, names to be used, what reports were available and their format, etc.
2. Data collection was initiated by the end user and TTS. All available data was reviewed by TTS for quality and accuracy in preparation for entry into the Lodestar database.
3. Reviewing the reports in TTS' quality assurance process included full review of all reports for correctness, parts rotation and applied service bulletins.
4. Customization and implementation was conducted by establishing the initial program with software modules, databases, uploads of all data and reports, and verification of the data.
5. Training took place in a class room-like setting at the site. Updates and additional training was provided via online communication venues like Skype and conference calls.

Several benefits were realized very quickly:

- Lodestar was very user friendly and tracked:
  - Full maintenance history
  - Individual parts in the unit with remaining lifetime using online operational values
  - Inspections
  - TILs
  - Operational data/hours
  - Component life
- Lodestar had robust reporting tools that included:
  - Graphical representation of maintenance timeline
  - Identification of components driving outage schedules
  - Interactive future planning model
  - Cost and value reports plus budget planning
  - Easy data entry

RESOLVE

- Lodestar has been in operation for well over one year. Management has identified greater than a 16% cost savings in maintenance costs from implementing the app.
- The operator, as well of the rest of the industry, has experienced some attrition in personnel but this proved to be a non-issue since Lodestar is licensed by the unit and not by the "seat".
- The full integration improved levels of innovation at the facility and brought about an engaging ecosystem with other technology partners including TTS.
- One of the most significant benefits was the predictability of disruptions and outages - minimizing downtime.

"This has been an amazing transformation; we no longer guess at the useful life or condition of our gas turbines parts… a big relief." Facility Maintenance Manager.