



Harnessing Energy for Life

O&M

Executive Summary

OUR BEGINNINGS

A FAR-REACHING FOUNDATION

Founded in 2002 in Minnesota, USP&E has offices worldwide. Since inception, USP&E has engineered and designed over 5000MW of power stations and sold over 1000MW of gas, HFO, and diesel engines and turbines in a variety of industries including mining, oil/gas, textile, telecom, crypto, marine, utility, IPP, commercial and heavy industrial.

OUR GLOBAL FOOTPRINT



Since inception, USP&E has supplied Owner's Engineering, BFS, design, EPC, and O&M services to client projects for over 1000MW of gas turbines and reciprocating engines to clients in North America and Emerging Markets, including:

- A 13MW HFO power station in Guatemala for Perenco Oil;
 - A 20MW Wartsila HFO plant (purchased in India second hand) for a mining project in Chile;
 - A 100MW CAT HFO CM32 rebuild & recommissioning project in West Africa;
 - A 270MW gas turbine design, EPC and O&M project in Texas;
 - A 62MW gas turbine design and sales package to client in Canada;
 - A design and owners engineering package for large IPP in South Africa;
 - A 16MW HFO plant for a mining concern in Sierra Leone;
 - A 40MW Power station in Guinea for a Brazilian client;
 - A 120MW plant refurbishment, overall, rebuild, EPC and O&M for a large mining industry client;
 - Various mines in West Africa including a 36MW, 25MW and 100MW+ solar-HFO hybrid; and
 - A 32-engine customized generator order for a large mining operation in Panama, which we designed and manufactured through an OEM we often use in Italy.
 - A 5MW EPC and O&M project for mining client in Madagascar, expanding to 50MW in 2023.
- + Over 200 power stations installed across the USA and Canada
- + A highly customized emergency upgrade package to 8 different billion dollar cruise ships

As such, USP&E is a major supplier of power generation equipment to the global mining, industrial, utility and independent power producer (IPP) markets.

OPERATIONS & MAINTENANCE

AT USP&E

We have summarized our O&M methodology, experience and references in this document to showcase the unique value we bring, which is critical in delivering long term economic sustainability and success to your renewable and thermal energy projects.

For over 20 years, USP&E has designed, built, and operated power stations in around the world. Through 12/31 2021 USP&E records show we have provided installation, operations and maintenance services that allowed for the production of over 4,050,360,000 kWh's.

USP&E would be honored to supply operations and maintenance services to your next power station project. This document presents an overview of our power generation qualifications which demonstrate our core principles of “extreme ownership” and “speed with excellence”.

speed with excellence
& extreme ownership

USP&E HAS SUCCESSFULLY OPERATED AND MAINTAINED POWER STATIONS WORLD WIDE FOR COMPANIES SUCH AS:



RENEWABLE & CONVENTIONAL

O&M TECHNOLOGIES

As a recognized and award-winning O&M power station contractor with references from some of the largest companies in the world, USP&E has the experience necessary to care for your power station. As your O&M contractor, we provide a 'safety net' for the plant owner to ensure that the plant is operated and maintained to maximize reliability, availability, and output in the most efficient manner possible.

Acting as both the Commissioning Agent and the O&M Service Provider, USP&E guarantees the electricity output at a fixed price. Whereas many firms in the USA and Europe will have difficulties calculating their risks for such an undertaking, USP&E is a multinational firm with deep foundations in emerging markets. Due to lessons learned for over 20 years across North America, South America and Africa, USP&E addresses RISK head-on.

USP&E's online performance and condition monitoring software is called "SMARTpower." SMARTpower is a real-time custom designed tool that allows us to manage and review plant performance, predictive maintenance, standard operating procedures (SOPs) and safety protocols for each site we work on. Collecting operating data continuously throughout each operational month provides all shareholders the opportunity to analyze and make decisions on the performance and efficiency of the entire plant. Using predictive analytics tools such as SMARTpower, makes USP&E offerings unmatched in the marketplace.

THIS PLATFORM OF CONTINUOUS IMPROVEMENT IS THE BACKBONE OF WHAT "THE USP&E DIFFERENCE" IS ALL ABOUT.



01
Factory &
USP&E trained
technicians
on-site

02
Millions
saved in fuel
efficiency
optimization

03
OEM spares
fast tracked
and managed
online

04
Expert design,
installation,
construction,
start-up and
commissioning

05
LTSA's with
robust
guarantees
and warranty
options
to ensure
operational
success

EXPERIENCE YOU CAN TRUST

GENERAL PLANNED MAINTENANCE

ENVIRONMENTAL
AIR FLOW OPTIMIZATION &
EXHAUST GAS MONITORING

MECHANICAL
FUEL, OIL & WATER
FILTRATION SYSTEMS

OPTIMUM OUTPUT
LOAD MANAGEMENT
STRATEGIES

PREDICTIVE MAINTENANCE

Continual
Improvement
to GPM
Strategy

Integrated
CMMS

Advanced Staff
Training

OEM Parts

Exceeding OEM
Specs

Online
Performance
Reporting

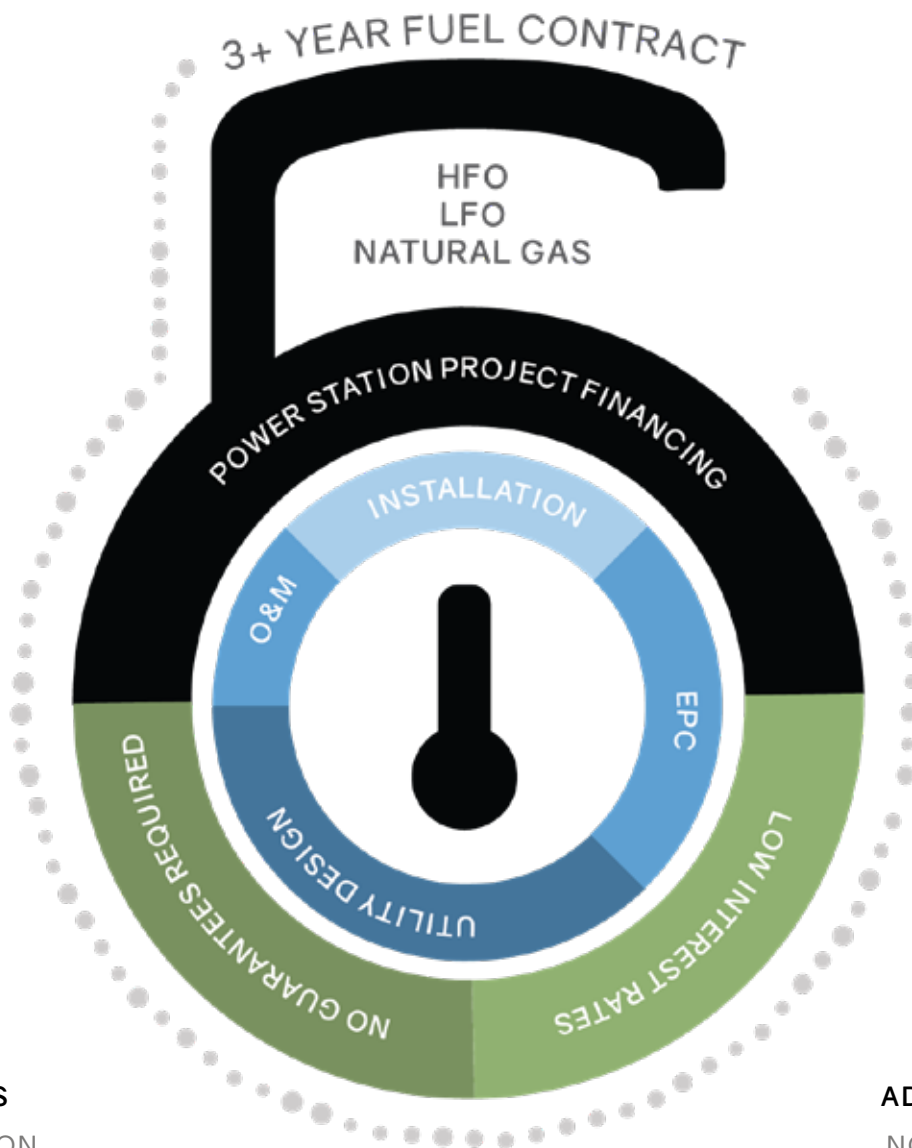
- **DECREASED**
OEM PART COSTS
GENERATOR COSTS
FUEL CONSUMPTION
LABOR COSTS

+ **INCREASED**
UP-TIME
ASSET LIFE
FUEL EFFICIENCY
SITE PROFITABILITY

UNLOCKING FUEL-BACKED FINANCE

WHEN YOU CHOOSE US TO SUPPLY YOUR FUEL, WE FINANCE YOUR PROJECT.

With 3+ year fuel contracts, we finance power station projects at impressively low interest rates.



INCLUDES

INSTALLATION
UTILITY DESIGN
EPC
OPERATIONS &
MAINTENANCE

ADDED BENEFITS

NO GUARANTEES
NECESSARY.
FUEL + LUBE OIL +
ELECTRICITY AT A
VERY LOW TARIFF.

USP&E O&M STRENGTHS

A SUMMARY

MAXIMUM RELIABILITY

Complete outsourcing of operations and maintenance services with onsite technical and safety training programs.

ON-SITE TECHNICAL SUPPORT SERVICES

Specialized support services to improve overall plant performance, including Six Sigma cost reduction strategies, feedstock fuel efficiency optimization programs, and E-Tap electrical load optimization and analysis tools.

BIOMASS AND CONVENTIONAL FUEL MANAGEMENT SERVICES

Professional supply chain management in any biomass OR conventional project is of critical importance in order to ensure plant performance and reliability are maximized.

ONLINE MANAGEMENT REPORTING

Real time remote annunciation of all critical systems, processes, and spares inventory levels for optimal transparency, visibility, and accountability - which work together to ensure maximum production/energy yield.

ENVIRONMENTAL HEALTH & SAFETY PROGRAMS

Extensive health, safety, and environmental management systems and programs that meet or exceed existing site EH&S program requirements.

PROJECT EXPERIENCE

With a heritage in design, procurement, construction, and installation of biomass, HFO, and natural gas power station projects throughout the world, we have earned a reputation for excellence by combining technical know-how with practical experience.

RENEWABLE & CONVENTIONAL

POWER STATION O&M APPROACH

USP&E has invested significant resources over the past twenty plus years in order to have the systems in place to ensure that each new O&M project is a success. USP&E works with all major OEMs for spare parts, tooling, and major services support as needed. Our O&M platform is driven by our relentless pursuit of SPEED WITH EXCELLENCE in everything we do. This manifests in our continuous improvement programs in our general planned maintenance practice. USP&E is a software and technology based company that offers first-in-class services to major companies looking for only the most reliable, honest, and hardworking teams of O&M service providers available.

With offices in the USA, Europe, Africa and the Middle East, we understand the challenges many of our customers face daily, whether political, social, economic, or environmental. We also appreciate the invaluable transformational opportunity USP&E have to bring employment, education, and critical emergency response services to impoverished regions around the world.



LOCAL PRESENCE

With local offices near each project site, USP&E has successfully worked in North America, South America, Europe, Africa, and the Middle East since 2002. Our commitment is demonstrated by our focus on training, accountability, sustainability, and energy efficiency. We are proud to be so absolutely committed to harnessing energy for life at USP&E!

ENERGY PLANT O&M TEAM

As one of the most exclusive companies with the most rigorous hiring practices, USP&E's O&M Team Roster is truly impressive. As a team, USP&E have the critical skills required to design, build, operate and maintain your Power Station. Our ability to provide such a highly qualified O&M team of power station engineers for your project, with the pre-requisite skills at the right price, is THE key differentiator from our competitors. Moreover, we believe that USP&E's O&M Team's contributions will be instrumental in making your project a long-term success.

OPERATIONS & MAINTENANCE

OVERVIEW

USP&E is a leading provider of O&M services in the power generation industry. In order to illustrate the scope and depth of our experience in providing O&M services, we are presenting below our philosophy and standards that govern each of our O&M projects.

MAINTENANCE PHILOSOPHY



USP&E understands that the millions of dollars that power plant owners initially invest in their equipment is often only a fraction of their total cost of ownership over the project life cycle. It is strongly recommended that a dedicated and experienced O&M specialist manage the service and maintenance of the power station assets with a view of ensuring energy efficiency and asset life extension targets are maintained while keeping reliability above 99%.

USP&E's maintenance philosophy has four objectives:

1. SAFETY
2. RELIABILITY
3. OPTIMIZATION
4. VALUE

O&M

Our documentation library includes best practices and procedural guidelines on topics such as:

- Predictive maintenance and advanced diagnostics.
- Engine Calibration for Efficiency Optimization.
- Calibration of resistance temperature devices.
- Maintenance and cleaning of key electrical and mechanical components.
- Root cause analyses.
- Preventative maintenance.
- Yield optimization.
- Process engineering.
- Continuous Improvement.



MAINTENANCE STANDARDS

USP&E's has tremendous expertise in achieving greater equipment availability and reliability. We do this by following a robust quality assurance program. These processes follow global standards (ISO 9000-2008) that measure true quality. USP&E established these processes to ensure that the equipment is maintained according to manufacturer requirements and to optimize yield and overall plant performance.

USP&E maintains a professional documentation department that keeps up-to-date manuals on important tasks and topics for maintaining equipment and providing standards for operations. For example, our Environmental Health and Safety Plan details the specific job responsibilities of each employee, as well as documenting the related safety, health, and environmental responsibilities of each position.

BEST PRACTICES

O&M

speed with excellence
& extreme ownership



USP&E adheres to the U.S. Department of Energy's Operations & Maintenance Best Practices Guide. There are five well-defined elements of an effective O&M program:

OPERATIONS

MAINTENANCE

TRAINING

ADMINISTRATION

ENGINEERING

While these elements form the backbone for a robust O&M market strategy, the key lies in our commitment to our core principles of SPEED WITH EXCELLENCE and EXTREME OWNERSHIP.

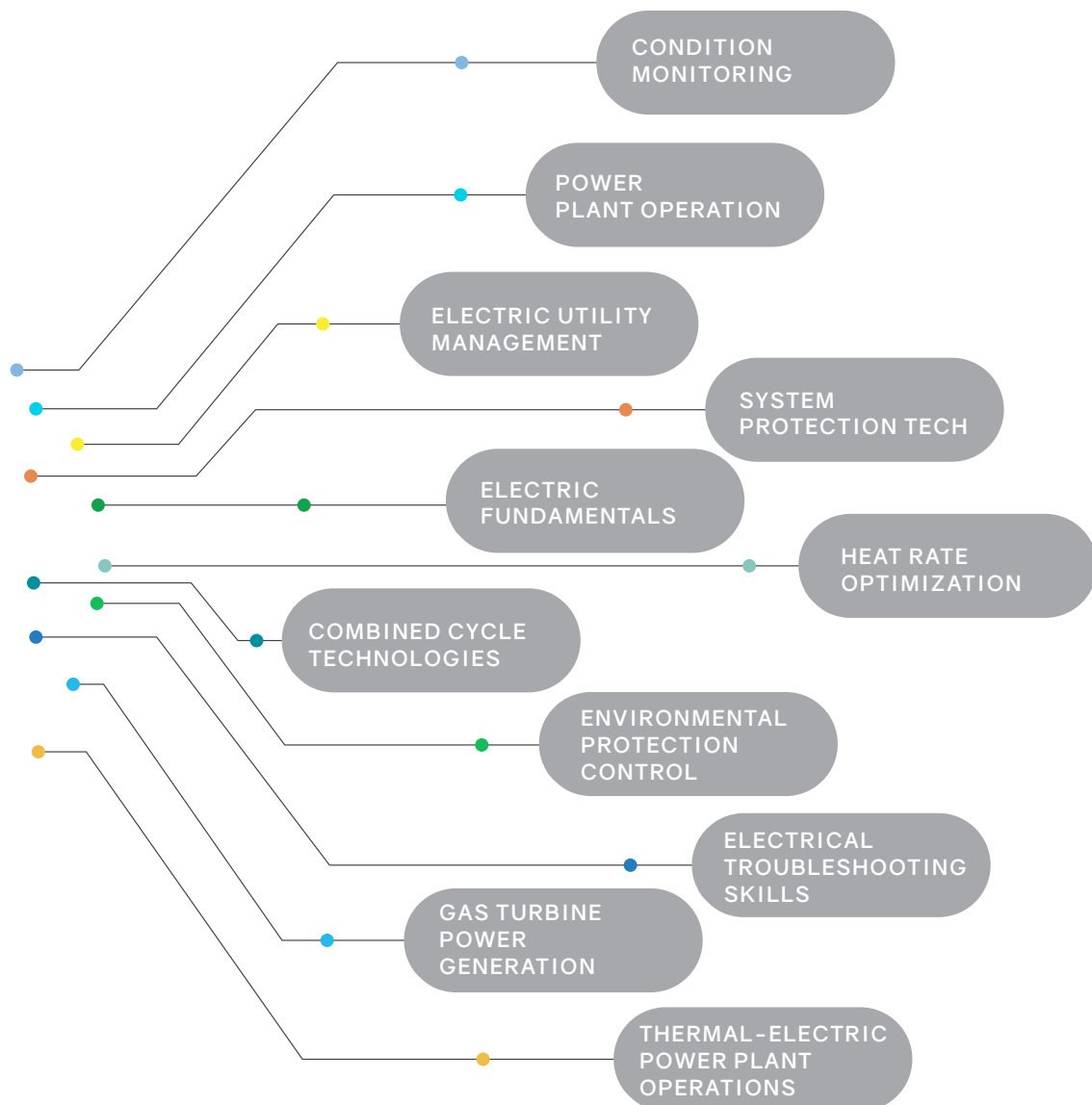
USP&E uses the most aggressive standard operating procedures (SOPs) available to achieve our organizational promises and delivery on our purpose of Harnessing Energy for Life.

TRAINING

O&M

As an experienced EPC & O&M of powerplants, USP&E understands the importance of training preventative maintenance technicians and operators to assume operation and maintenance activities. From the initial design and EPC stages, USP&E implements proven onboarding, training, and resource development practices. This is to ensure our junior team members have the skills and training necessary to fulfill our promises of extreme ownership and speed with excellence.

USP&E uses a variety of skills development best practices, with a primary focus on practical demonstrations and hands-on operational experience. For the right candidates with the drive and ambition to learn and see the team succeed, USP&E offers unlimited opportunities for advancement and growth in a spirit of mutual respect and trust. USP&E's on-the-job training is comprehensive, and trainees are taught safety policies, procedures, operations, and functions necessary to perform each job function. The following is a brief list of topics and tasks that USP&E covers in our internal training programs:





ONLINE REALTIME PERFORMANCE REPORTING PERFORMANCE MONITORING

Communication, collaboration, and coordination between team members and management are important elements for keeping each project on track. A variety of methods of reporting, tracking performance, and plant equipment monitoring are used by USP&E.

Through the use of this proprietary, web-based software control and annunciation platform, USP&E's senior team of E&IC project managers, are some of the best controls people in the world. This team of experts can remotely trouble shoot problems, modify key parameters, evaluate HMI, PLC, VHD and other sub-systems, and work to find immediate solutions in real time, no matter how remote the project site.

Key functionalities of SMARTpower include:

- Energy output metering
- fuel consumption
- Engine reliability
- Overall plant performance
- Fuel efficiency

The multi-layered program tracks:

- Temperatures
- Pressures
- RPM
- Frequency
- Alarms
- Upcoming services Number of engines that have run
- Number of engines that are next in line for services
- Energy trend and capacity of an engine

A PLATFORM LIKE NO OTHER

FROM ANYWHERE IN THE WORLD



First launched in 2009, SMARTpower is an online fuel efficiency and O&M tool for power generation that was created by USP&E to digitally monitor power plants that we operate and maintain. This proprietary web-based control system monitoring tool, utilizes advanced and fully encrypted power plant control room data feeds. For the purpose to create an elegant KPI dashboard that measures all of the most critical power station variables. The uniqueness of the program lies in its ability to capture the entire operations process including manpower, work orders, spare parts inventory and service schedules, condensed into a single operational dashboard for KPI tracking and variance management.

This state-of-the-art fully-encrypted and secure, uniquely designed software platform works with any mix of engines, PV, energy storage, and other generation equipment.

SMARTPOWER OFFERS

Reduced equipment and asset downtime by up to 26%

Extended asset and equipment lifetime by up to 11%

Fully integrated with any local HMI and PLCs with integration of SMARTpower

Predictive analytics with precision rebuild technology

PRE-COMMISSIONING PHASE

GENERAL SCOPE OF WORK

Before the O&M phase of a project begins, USP&E will travel with senior engineering staff to meet with various OEMs involved in supplying equipment to a project site. This will allow for introductions and high level training to begin well in advance of commissioning. During the entire course of construction, key members from the global USP&E O&M team will participate in site visits to the Project Site; followed up with increasing frequency as the equipment is installed. USP&E's work during this phase will also provide the opportunity to evaluate progress and anticipate any additional program improvements and enhancements to the facilities (such as workshops, office space, etc.), that may be needed at the site during the first year of operation.

A GENERAL OVERVIEW OF USP&E'S SCOPE OF WORK FOR THE PRE-O&M PHASE INCLUDES THE FOLLOWING:

- Provide input to the EPC Contractor on site layouts and drawings during design meetings and strategy sessions.
- Communicate with Owner regarding plant work areas, lay down areas, such as office space, maintenance shop, warehouse, etc.
- Initiate recruitment and onboarding practices for skilled tradesmen positions, as well as formulating a plant-specific training plan.
- Provide experienced technicians to assist with every aspect of the commissioning and transition to operations and maintenance phase.
- Initiate training of commissioning staff pursuant to USP&E's Quality Assurance Plan; Health, Safety, and Environment Plan; and OEM requirements.
- Provide advanced operations and maintenance, control room operations, and technical training to senior USP&E O&M staff at the OEM factories as needed.
- Engage EPC and OEMs with USP&E's pre-commissioning checklists and coordinate with all parties to prepare for commissioning.
- During installation and pre-commissioning tests, USP&E will monitor engines and data transmissions from the EPC contractor; and test alarm and condition monitoring systems.
- Work with Owner and EPC contractor to test and commission the plant equipment, including preparation of test results, if necessary, and punch list items to be addressed.

OPERATIONAL PHASE

GENERAL SCOPE OF WORK

USP&E offers flexible, site-specific O&M programs with field-proven policies and procedures that ensure a project's success. Your USP&E team has broad field O&M experience working on the full spectrum of power generation technologies. These include combustion turbines, steam turbines, reciprocating engines, boilers, control systems, auxiliary plant equipment, balance of plant, and renewable energy assets. As a third party contract operator, USP&E believes that our performance goals must be fully aligned with the customer's financial targets in order to leverage the economic potential of the energy generating asset.

COMPLETE O&M SERVICES

USP&E offers complete outsourcing of 24/7 professional operations and maintenance services anywhere on the planet. USP&E implements O&M programs emphasizing worker health and safety, and maximizing plant equipment reliability, availability, and performance. USP&E manages major maintenance activities, such as routine and overhaul outage planning and execution.

O&M PROCEDURES & TRAINING

USP&E prepares standard operating procedures (SOPs) unique for each project and implements plant-specific training programs at all USP&E project sites.

MAINTENANCE PLANNING

USP&E prepares preventative maintenance plans, schedules, and procedures, and then integrates them with our predictive online maintenance software program called **smartpower**

PROJECT MANAGEMENT

USP&E provides experienced project management teams that take a project through the entire process including pre-commercial checkout, operation during startup, plant commissioning, and commercial operation.

INSTRUMENTATION & CONTROLS

USP&E provides experienced I&C technicians capable of performing DCS software updates, modifying/ updating existing DCS systems, and providing instrumentation calibration and checkout services.

PLANT STAFFING

USP&E provides technical specialists and project management personnel through all phases of a project, including development, engineering, construction, commissioning, and ongoing operations and maintenance. USP&E hires plant personnel and assists with plant employee relations. USP&E provides benefits administration in compliance with laws and regulations.

ADMINISTRATION

USP&E sets up processes for accounting and finance systems, such as purchasing and inventory control, payroll, accounting, and administrative training. Common accounting and finance systems can be setup for multiple plants for consistent financial reporting.

DETAILED LIST OF O&M SERVICES

FOR A TYPICAL THERMAL POWER STATION

IN ADDITION TO THE MAINTENANCE TASKS DETAILED FURTHER IN THIS SECTION, USP&E WILL PROVIDE THE FOLLOWING SERVICES DURING THE OPERATIONAL PHASE OF EACH PROJECT:

- Provide skilled labor, including management, supervisory and skilled tradesmen positions, and provide security for all O&M personnel
- Operate and maintain the main engines boilers, steam turbines, generators, condensers, and auxiliary support equipment .
- Operate and maintain the electrical HV, MV, and LV switchgear systems, substations, and transformers.
- Operate and maintain the cooling towers and chemical injection systems.
- Operate and maintain the pump stations and related support equipment.
- Operate and maintain the conveyor system that transports the feedstock / fuel into the energy production facility.
- Operate and maintain the water treatment plant.
- Operate and maintain any blackstart / emergency diesel generator 400V.
- Operate and maintain any UPS systems for continuous operation.
- Work closely with the Client regarding the dispatch of electricity generated at the plant.
- Perform all preventive, predictive, corrective, routine, and annual maintenance tasks at the plant, as per OEM and client requirements.
- Perform root cause analysis and premature failure logs, corrective action procedures and continual improvement programs.
- Provide fuel / feedstock management and measurement functions.
- Initiate all warranty monitoring procedures; monitor equipment for defects.
- Manage and maintain spare parts with online management reporting systems.
- Communicate via reports, meetings, etc. to client on a scheduled basis.
- Coordinate with any governmental authorities regarding environmental regulations.
- Provide ongoing classroom and virtual and on-the-job training to all staff from senior managers through to day laborers, with an emphasis on safety training, predictive performance analytics and fuel efficiency optimization.



FUEL OIL, GAS AND BIOMASS

MANAGEMENT SERVICES

The key to operating a reliable and successful power plant begins with reliable fuel supply agreements. In order to maximize uptime and asset life, while optimizing output, USP&E ensures that Plant Operations and Fuel Management teams work closely together to ensure feed stock is kept to the highest quality standards possible.

Fuel Management Services include strategic planning, fuel procurement, handling, testing (visual and laboratory), and storage of oil / biomass fuel. USP&E's O&M personnel provide a wide range of experience and expertise to ensure that a plant's performance and reliability are optimized through the use of the highest quality fuels and lubricants. The true cost of feedstock goes beyond the price paid to fuel suppliers. USP&E have worked for years to continually enhance operational run time and achieve higher annual generation through rigorous and focused fuel management.

Total fuel cost savings are not usually seen in a reduction of the cost of fuel per ton. The savings are recognized in the total tons required to produce the same generation output, improved plant performance, decreased maintenance costs, higher availability, and consistent year-over-year generation. Fuel suppliers must receive continual feedback on the quality and heating value of the fuel delivered, not just a cost per bone dry ton. This must be measured and documented by competent and professional staff, recorded and disseminated using trusted, state-of-the-art software such as USP&E's **smartpower**

THE PRIMARY OBJECTIVES OF USP&E'S FUEL MANAGEMENT SERVICES ARE:

MANAGE

Manage the storage of fuel to minimize fuel degradation and environmental impact. Proactively ensure that fuel delivered to the power station meets or exceeds USP&E fuel quality (mass, humidity, calorific value, etc.) planning protocol.

WORK

Work to ensure that the fuel supply area is clean, orderly, and safe in order to meet plant production targets. Ensure that all USP&E staff are trained on fuel inventory, measurement, and safety in order to ensure optimal power output is achieved at all times.

OVERLAY

Overlay current market data with relevant plant fuel usage data in order to optimize biomass fuel purchases, transportation, and delivery costs. Engage public agencies in support of long-term viability of biomass power.



OUR PROMISES

SPEED WITH EXCELLENCE

EXTREME OWNERSHIP

“We will put the health and safety of all staff members as a first priority, while also optimizing the economic return of the plant for the customer through excellence in O&M services.”

OFFICES



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Offices in USA, Beirut, England, Dubai, Mali, Botswana, Madagascar and South Africa

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OF OUR PROJECT ENGINEERS.

bop&e sap&e wap&e dup&e



Harnessing Energy for Life

smartpower smartcrypto smartjet