

Optimization and Control Project Management and Installation Services



Project Management Services

That Evolve with Your Needs Over the past 20 years many companies have changed their business models to adapt to industry conditions—such as focusing on competence and outsourcing specialty services.

During that time, our Bently Nevada product line has evolved from providing great condition monitoring hardware and software to providing complete turnkey solutions. To date, our team has successfully managed thousands of retrofit projects globally.

From its inception, the Project Management group has made documentation a priority:

1. Mechanical designs/machine modifications
2. Electrical designs and conduit routing
3. Cabinet designs and wiring diagrams
4. Electrical specification
5. Run-out specification – secondary resonances

BHGE Project Managers – Providing Insight and Expertise for Successful Outages

To guarantee a successful condition monitoring project, we recommend that all customers choose turnkey solutions. However, we can offer as much outage support as your company may need.

Our turnkey solutions include a project manager to act as a single point of contact for every aspect of the installation. The project manager makes contact within two weeks of receiving an order and will set up a

kickoff meeting at that time—ensuring that the entire team from both companies fully understands the scope of the project.

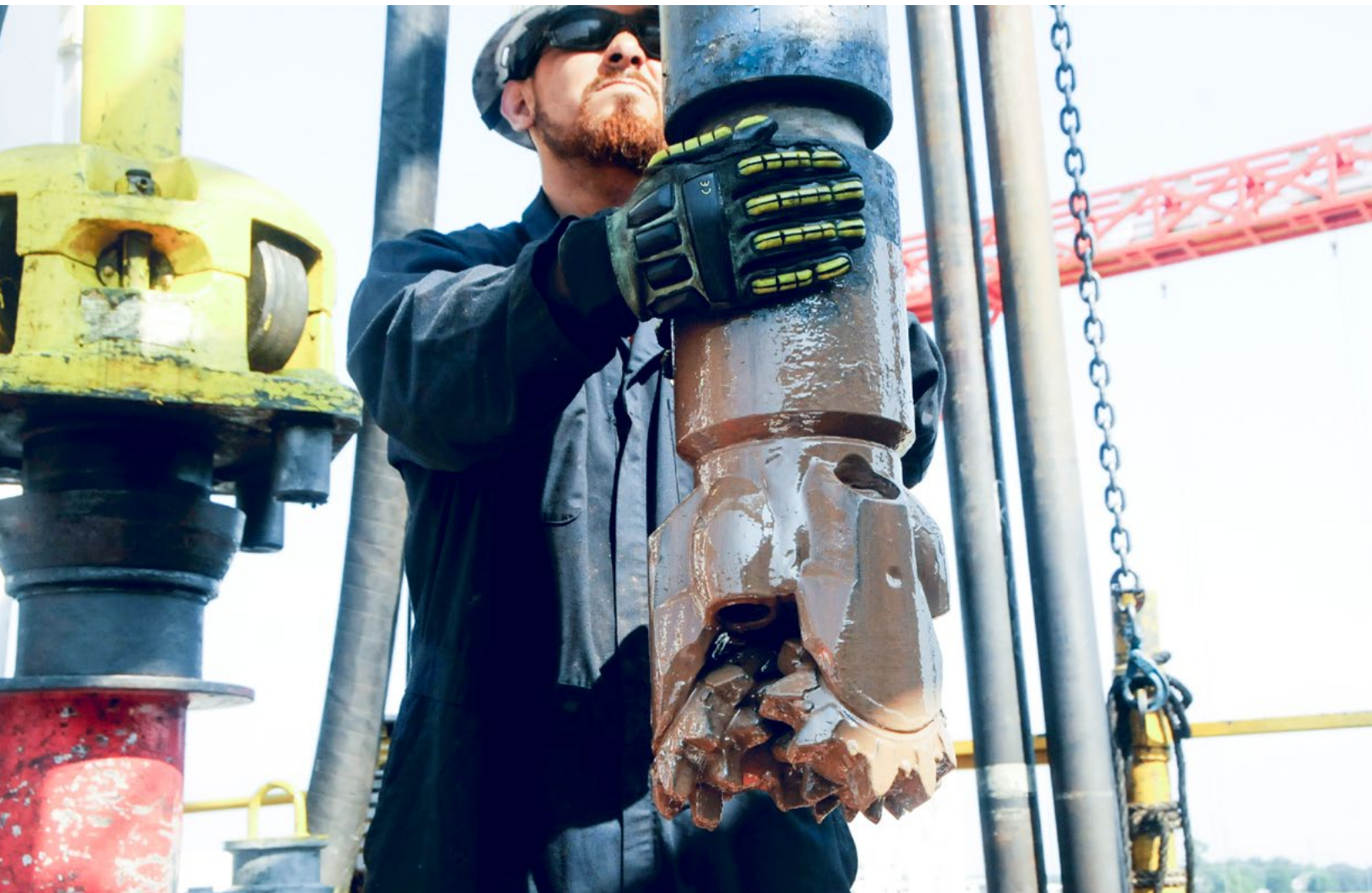
At the conclusion of the kickoff meeting, the project manager obtains bids from the electricians and machinists for all necessary work to be completed. At this time, some hardware and software can be ordered, and any custom enclosures may be defined. If a software package is to be delivered, the data-gathering phase is also initiated—including machine and bearing information which can greatly enhance the value of the software system we provide.

As the schedule for your outage comes closer, the project manager coordinates all electricians and machinists, as well as internal system and instrumentation engineers. The project manager is responsible for ensuring that all training requirements are met and all personnel are ready to begin work as the outage begins.

Once the machine disassembly begins, the project manager remains onsite to oversee the process. At this time, measurements will be taken and mechanical designs will be finalized.

By now the electrical design package has already been approved and delivered to the electrical crew. The project manager will supervise the electrical installation and arrange for all BHGE support personnel to arrive when needed.

As soon as the mechanical designs are complete, the project manager will supervise the fabrication of any parts needed. The project manager also supervises the drilling and tapping of any bearing covers to make sure that any stinger designs are such that they will not pick up any secondary resonances or block critical oil passages.



During re-assembly of the machine, the project manager will manage all resources to ensure that every part is installed and gapped correctly, hardware is wired and configured correctly, all loop checks are complete and that all the software is configured and collecting data upon start-up.

After the machine is returned to production, the project manager develops and delivers a project report—including installation information as well as all the part numbers that went into the system. The report will include all as-built drawings and pictures of the installation.

A second copy of this project report is retained in the BHGE archives—ensuring that if you have any questions or encounter problems in the future, a quick call to our technical support group will provide easy access to a knowledgeable representative. This ability to provide access to the project report—coupled with the deep technical background of the tech support representative—allows you to maintain your system with minimal effort.

Total Integration with BHGE Project Management

Our BHGE project managers have in-depth knowledge of the Bently Nevada products that are being installed—along with the OEM expertise to tie together all of the resources needed to execute a successful multi-discipline project.

When installing a transducer system, the BHGE project manager can ensure success by:

- Eliminating cross talk
- Minimizing runout
- Burnishing rotors
- Eliminating secondary resonances
- Strictly conforming to API (American Petroleum Institute) 670 Standard
- Procuring all components
- Designing/supervising/specifying mechanical modifications
- Supervising/specifying electrical subcontractors

When new protection systems are needed, the BHGE project manager will ensure that:

- All relays and trip signals function properly
- All integration to third party systems are communicating
- The newest revision to all components are installed (firmware in racks, current backplanes, all issues resolved)
- All wiring meets established BHGE standards and electrical noise is eliminated
- Ground loops are eliminated
- System installation and configuration follows BHGE's Bently Nevada "best practices"

If a new software platform is required, the BHGE project manager is the only resource certified to install System 1® software. Before they are allowed to install any software on site, all project



managers undergo extensive training and are required to pass rigorous proficiency exams. By using BHGE Project Management and Installation Services you can be certain that:

- Networking and firewalls have been configured
- Computers meet System 1® requirements
- All OPC, Modbus, and NetDDE communications are functioning
- All deployment documents are in place
- Startup/shutdown data is configured properly.
- Plot groups, graphs, and display meet user requirements
- Current service packs are installed
- Technical Support Agreements have been activated

Complete Project Services Offerings Include:

- Mechanical designs
- Mechanical labor/supervision
- Electrical designs
- Electrical labor/supervision
- Hardware and software specifications
- Site personnel qualification (training and background checks)
- Project coordination
- Front End Engineering Design (FEED)
- Shutdown/ startup support (MDS or S&I)
- Project scheduling
- Project documentation package

The OEM Advantage

When you choose our project services you are using highly skilled and experienced project managers who ensure that your outage will go as planned—and that your monitoring system will never be in the critical path to startup.

Cost-Effective Turnkey Solutions

Since the quote we provide you is fixed price, when you purchase a turnkey solution, you are passing on most of the financial risk of the project to our team. As long as the scope of the work does not change, the price does not change. If ordered parts do not function properly, the parts are returned and correct parts are immediately shipped.

Our comprehensive documentation shows that in many cases where we have quoted a price for a turnkey solution—and that option was not selected—the end-user paid more and received less support on a time and materials basis.

Tough Questions You Won't Have to Answer When You Choose Project Management and Installation Services

The machine is apart, I have three weeks left and I'm ready to order the hardware to install. What hardware do I order?

Project proposals do not include complete part numbers for the hardware. The reason is that at the time we quote, we do not know exactly which options will be necessary to complete the job. Therefore, you will not be able to order the hardware based on a quote. This is the reason we require our project managers to be on site as disassembly starts.

We're pretty sure we installed everything correctly, but we're getting communication errors. What's causing them?

These types of problems are difficult to troubleshoot. Various types of communication errors may arise from wiring not meeting standards, from damage to hardware during installation, and from any data conversions that take place. The ability to troubleshoot an OPC error to the DCS is greatly reduced when our project managers are not involved during the installation process.

I have too many probes, what's your return policy?

Our project manager is responsible for managing costs. You don't need to deal with returns, extra hardware, lack of enough hardware, or any other issues that will impact your outage.

It's time for system checkout. Where's my Field Engineer?

One of the nice things about doing work on a turnkey basis is that we can plan for it well into the future. The project manager will work with the service manager to have all necessary resources allocated for your project.

Our company made a significant investment in the system but it is not working. We didn't think we needed installation help at the outset but had to bring in some local techs to finish the job. Why won't BHGE support their products?

Installations of monitoring systems are not easy. Only when we are involved in the installation can we be responsible for the final product. This is not an uncommon question for companies that try to "go it alone" or save money by using uncertified labor. Of course, we will do everything we can when you ask for our help, but the critical question will be: "When is your next outage?" Most likely the problem can't be completely solved until we have access to the entire system.

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GEA15011A

11/2018