

DLN1+ Combustion Upgrade Solution

Stay online longer while lowering costs and emissions with up to 32,000-hour maintenance intervals

GE helps you expand the value of both your assets and plant operation with the Dry Low NO_x (DLN)1+ combustion upgrade solution for GE's B/E-Class gas turbines. This advanced technology extends combustion inspection intervals up to 32,000 hours or 1,300 starts when operating on natural gas.† With the DLN1+ solution, you can stay online longer than ever before—reducing maintenance costs and emissions while delivering broader operational flexibility and extended asset life.

In addition, when combining the capability of DLN1+ technology with GE's Advanced Gas Path (AGP) solution, you can reap even greater rewards. These two technologies together can extend and align your gas path and combustion maintenance intervals up to 32,000 hours—providing up to four years of continuous operation between inspections.‡

Benefits

DLN1+ technology can translate to:

- Reduced maintenance/operating costs through extended intervals of up to 32,000 hours or 1300† starts
- Lower NO_x emissions, down to as low as 3 ppm† without the use of water, steam or ammonia
- Broader fuel flexibility for increased levels of ethane, propane, butane and hydrogen
- Fuel cost savings from lower emissions-compliant turndown to as low as 35% load†
- Extended asset life
- Additional revenue opportunities

Advanced features enable higher performance, system durability‡

With component wear being a leading contributor to combustion repair costs, GE has designed advanced technology combustion parts that help reduce system degradation. Built on proven combustion technology, and data-driven insights from more than 43 million hours of operation, the DLN1+ solution delivers advanced features including enhanced thermal barrier coatings (TBC), stronger contact surfaces and reduced clearances. These advancements translate to lower emissions and more durable, long-lasting combustion components.



- **Primary fuel nozzle** – A bolted design provides tighter fuel control, as well as improved assembly and maintainability.
- **Secondary fuel nozzle** – A flangeless design reduces the potential for leaks.
- **Liner and flow sleeve** – Redesigned center and aft sleeves reduce creep and bulging. Additional enhancements provide tighter air control, reduced seal temperatures, uniform loading, and reduced wear and wear variation.
- **Transition piece** – The new transition piece delivers improved creep and strength characteristics.
- **Cross-fire tubes** – A new alloy material for the inner male and female cross-fire tubes enable better heat resistance and less oxidation.

Applications

This offering is available on all GE 7E/7EA, 9E, and 6B gas turbines with DLN combustion systems, as well as select standard combustion systems.

The GE Advantage

DLN1+ technology is offered through GE's Power LifeMax* portfolio. The Power LifeMax* delivers a suite of hardware and software blended solutions that help reset the clock on your aging GE B/E-Class gas turbine assets by recapturing lost performance and lengthening asset life. Built from 100 million hours of real-world operating data, and drawing on a co-creation process between our team and yours, your Power LifeMax* solution is customized to precisely fit your goals, assets and operating profile.

* Trademark of General Electric Company

† Performance will vary depending on asset frame type and configuration. Maintenance intervals of up to 32,000 hours are also available for standard diffusion combustors.

‡ System features vary depending on gas turbine frame type.

For more information contact your GE Representative or visit: www.powergen.gepower.com.

