

# SUPPORTING SERVICES

AN EXAMPLE OF HOW GE HELPS CUSTOMERS IN THE OIL AND GAS INDUSTRY

## Supporting Services and System 1 Historical Records Help Identify Bearing Problem.

GE's Bently Nevada\* team has a Supporting Services Agreement (SSA) with a petrochemical plant in India. The agreement, which includes periodic machinery health monitoring and emergency support, recently helped avoid a major outage and significant damage to critical machinery.

### PROBLEM

As part of a regular site audit for a petrochemical plant in India, a GE machinery diagnostics (MDS) engineer was asked to support a post-outage startup of a centrifugal compressor coupled to a three-stage expander. During the outage, an expander bearing was replaced due to some brownish oil varnishing marks that were discovered. The machine was restarted, but after fifteen minutes running at steady state, it suddenly tripped on high vibration at the spot of the replaced bearing. The customer inspected the new bearing but found no visible damage, and then made several unsuccessful attempts to restart the compressor.

### SOLUTION

GE's remote MDS engineer used System 1 to review seven years of historical reports on the machine and found data indicating similar vibration excitation in the same bearing. The problem was previously cured by a modification to the oil inlet nozzle sizing. When presented with System 1 findings logging the detailed history of the machine, the customer and original equipment manufacturer agreed that the new bearing installation might not be identical to the one that was removed, so the old bearing was reinstalled and the machine started successfully and ran at full load.

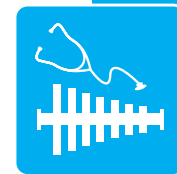
### PAYBACK

In avoiding a costly production outage, the customer credited a long-established relationship with GE's Bently Nevada business combined with good historical records and expert support. In this case, poor change management or system documentation was at the root of the problem, which highlights the importance of startup data collection and analysis support.

In the medical world, patients are kept under close observation after surgery for a reasonable period of time. This story emphasizes why GE recommends a similar approach for rotating equipment after any significant maintenance or modification.

### BENEFITS

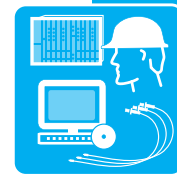
- **Avoided costly downtime:** quick analysis of historical records yielded a prompt solution and the plant was able to quickly resume production.
- **Change management:** good record keeping of historical information allowed for immediate diagnosis of the problem.
- **Long-established relationship:** SSAs help maintain lasting relationships with customers, which creates deep domain knowledge on critical machinery.



Machinery Diagnostic Services (MDS)



System 1



Supporting Services Agreement (SSA)

