

С.Сейфуллин атындағы Қазақ агротехникалық университетінің 60 жылдығына арналған «Сейфуллин оқулары– 13: дәстүрлерді сақтай отырып, болашақты құру» атты Республикалық ғылыми-теориялық конференциясының материалдары = Материалы Республиканской научно-теоретической конференции «Сейфуллинские чтения – 13: сохраняя традиции, создавая будущее», посвященная 60-летию Казахского агротехнического университета имени С.Сейфуллина. - 2017. - Т.1, Ч.5. - Р.55-56

QUESTIONS ABOUT OPERATION AND MAINTENANCE OF GAS TURBINE POWER PLANT

*Достияров А.М., Умирзаков Р.А.,
Қасенов Ә.А.*

Costs for maintenance and software availability are the two most important issues for the equipment owner. Well-planned maintenance schedule will ensure maximum equipment availability and optimal maintenance costs. To do this, you need a clear understanding of the nuances of performance, types of scheduled and unscheduled inspections of individual modules and parts of the installation, qualification and maintenance staff.

The main purpose of maintenance planning is to reduce downtime and unplanned stoppages on the repair which in turn directly affects the reliability of the entire station. When maintenance of gas turbines of the company General Electric, the design allows for on-site maintenance, repair and dismantling is required only for some components of high-temperature gas path and the rotor [1].

The lack of spare parts as the same may cause long-term downtime. Staffing spare parts depends mainly on the timely identification of the need for them. All units of General Electric as well as their spare parts are cataloged and numbered. When the need for this or that detail will appeal enough to the main office of the company, specify the number and negotiate the terms of delivery.

Vibration of the unit is an indication of the serviceability of the installation. A significant deviation from the norms may indicate the need for repair or adjustment of equipment. To such indicators, one can also include the dependence of the total fuel consumption on the load and the pressure in the fuel system. The latter may be due to clogging of fuel channels in the fuel injectors and malfunction of the measuring instruments. The temperature of the exhaust gases can say a lot. Too much variation in temperature can indicate the wear of the combustion system and the fuel supply system. Such problems drag a number of faults that inevitably lead to a reduction in the installation service [2, 3].

On the territory of Kazakhstan installation will experience stress caused by climatic conditions. Since the temperature, the national average ranges from 30 to 30 depending on the season, compressor blades and other mechanical parts that have direct contact with the environment will be exposed to additional wear. compressor blades consist of smooth airfoil. Any roughness on the surface leads to

a reduction in thermal efficiency and productivity drops. Companies, including those of GE, signed a contract for the supply of equipment in the first place holds a small test by reproducing the conditions under which their products will work in the future. This will prevent unexpected problems due to lack of training equipment to a particular environment. After the gas turbine will be released on a stationary mode, as inspections and gather information on the state of the compressor, because in most cases it was his fault and causes a decrease in the efficiency of the gas turbine plant. To prevent this needs constant supervision of the installation, competently made schedule maintenance and inspections, qualified staff and maintenance crews. Whenthesetems GTPPservice life [4, 5].

References

1. Author: Vicente Torres-Gonzalez, Edgar; Lugo-Leyte, Raul; Denise Lugo-Mendez, Helen; идр. ENTROPY Tom: 18 Release: 8 Article number: 286 published: AUG 2016
2. Author: Raghavan, Shaiju M.; Palatel, Arun; Simon, Jayaraj Group authors: ASME Conference: ASME Gas Turbine India Conference Местоположение: Hyderabad, INDIA published.: DEC 02-03, 2015 Sponsors: ASME, Int Gas Turbine Inst
PROCEEDINGS OF THE ASME GAS TURBINE INDIA CONFERENCE, 2015 Article number: V001T08A001 Published: 2016
3. G. Jarvis, "Maintenance of Industrial Gas Turbines", GE Gas Turbine State of the Art Engineering Seminar, June 1972
4. J.R. Patterson, "Heavy-Duty Gas Turbine Maintenance Practices", GE Gas Turbine Reference Library, June 1972.
5. Alan Freeman, "Gas Turbine Advance Maintenance Planning", GE paper presented at 'Frontiers of Power' Conference, Oklahoma State University, October 1987.
6. R.F. Osswald and J.P. Hopkins, "Evolution of the Design, Maintenance and Availability of a Large Heavy-Duty Gas Turbine", GE Gas Turbine Reference Library, February, 1988