

THE EFFECT OF APPLIED HIGH SPEED BALANCING METHOD ON FLEXIBLE GENERATOR ROTOR RESPONSE IN OPERATION

Zlatan Racic

Z-R Consulting

7108 18th Ave. West, Bradenton, FL 34209

e-mail: zlatanraco@aol.com

Juan Hidalgo

ReGENco LLC

6609R West Washington Street, West Allis, WI 53214

e-mail: jhidalgo@regencoservices.com

ABSTRACT

Two very flexible generator rotors of identical design were refurbished and high speed balanced by a turbine-generator manufacturer other than the OEM. All shop tests and the balancing results were very good, showing no anomalies. After placing the first rotor in operation it exhibited load dependent vibration with a “thermal vector” proportional to load. A second rotor went through the same process by the same non OEM. This rotor also exhibited a “thermal vector” when reinstalled, but at one half of the magnitude of the first rotor.

This paper deals with a Root Cause analysis of the rotors behavior described above and solution.

Keywords: Vibrations, Balancing Flexible Rotors, Eccentricities, FE Modeling