

Zones & SOW Functional Area(s) supported: All; 3.20	Contract # and Value: GS-23F- 0012K; \$4,465,000	Company: Life Cycle Engineering, Inc.,	DOC: On going GOVT POC: B. Thompson (619)556-0311
<p>Specific Experience: LCE conducted a system engineering study that investigated the failed rotor on a New Design General Electric 500kW Ship's Service Motor Generator set that exhibited a loose dc armature core on the rotor shaft's spider arms. This study included:</p> <ol style="list-style-type: none"> 1. Review of manufacturer detail designs of the dc armature core/spider arm key and keyway. 2. Reliability/maintainability analysis that defined the scope of the problem and its impact on ship operations. 3. Engineering analysis for correction of the dc armature core looseness. 4. Reverse engineering of dc armature core/shaft spider arm key and keyway interface. 5. Failure modes and effect analysis of the dc armature core movement. 6. Development and evaluation of a test plan for measuring core loss before and after repairs. 7. Development of shipboard weld repair procedure that included material's engineering based on welding techniques. 8. Testing and dissection of a repaired rotor for failure analysis and revision of repair procedure. 9. Shipboard repair instructions for onboard repair of failed rotors, and subsequent accomplishment of over eight repairs. 10. Work in concert with Code 934, and other NAVSEA Technical Authority and planning yard to execute the strategy, procedures, and subsequent "get well" program for the New Design MG Sets. <p>The final report contained engineering justification for the establishment of the root cause of the dc armature core movement and a recommended onboard weld repair procedure for problem correction.</p>			