



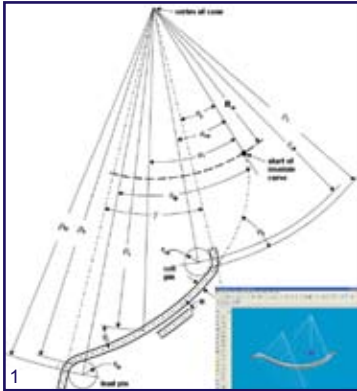
NATIONAL ELECTRIC COIL®

Our Experience Generates Results!

800 King Avenue, Columbus, Ohio 43212 • 3330 East 14th Street, Brownsville, Texas 78521

Spare Winding Package Highlights

- Complete engineering design and analysis
- Manufacture of coil tooling
- Prototype coil manufacture, complete through testing
- Manufacture of all coils, clips, caps and winding supplies
- Verification of fit in mock stator core
- Visit to NEC's High Voltage Coil Facility to witness prototype coil manufacture or testing



(1) Tooling for coil shaping and curing is developed from the engineering design using 3-D modeling. (2) Prototype coils undergo tests at various stages of manufacture. (3) Coils are transported to site for storage in specially built crates.

SES 403: Spare Winding Package

Application

This solution may be applied to any generator type, make, model or size. It is designed to address concerns that owners may have about a stator winding approaching its end of life or about a newer winding showing poor electrical testing results. The Spare Winding Package can help owners reduce schedules and costs during an unexpected forced outage.

NEC's Specialized Engineering Solution™

NEC developed its **Spare Winding Package** in order to reduce the overall time needed to complete emergency rewinds. It is projected that use of this package could reduce the rewind schedule for a forced outage by as much as 65 percent. As shown in the table below, reducing the schedule by 60 days could result in savings ranging from \$720,000 to over \$34,000,000, depending on unit size and market conditions.

The Spare Winding Package includes the complete engineering analysis and design for your machine, through the prototype manufacture and testing and the complete complete fabrication of all coils and winding supplies. If your winding fails, you have the opportunity for an immediate start of the rewind.

In order to participate in the Spare Winding Package program, NEC must be able to take machine data on the stator winding with the rotor out.

This data is required for the engineering of the prototype design and the manufacturing of tooling. If NEC already has sufficient data on your particular machine in its files, this requirement can be waived.

During manufacture and testing of the prototypes, you are encouraged to visit our factory. You also receive a report of factory testing results. Coils are verified for geometry and fit in a mock stator core at multiple times during the manufacturing process. They also undergo a battery of standard factory tests, including a final high potential test proving the design.

Potential \$\$ Saved in Two Months

Unit Size MW	@ \$10/MW-Hr	@ \$20/MW-Hr	@ \$30/MW-Hr	@ \$40/MW-Hr
50	\$720,000	\$1,440,000	\$2,160,000	\$2,880,000
100	\$2,520,000	\$5,040,000	\$7,560,000	\$10,080,000
350	\$4,320,000	\$8,640,000	\$12,960,000	\$17,280,000
600	\$8,640,000	\$17,280,000	\$25,920,000	\$34,560,000

NEC Qualifications & Resources

National Electric Coil has specialized in the manufacture of generator windings for the last 90 years. These include windings for air-cooled generators, as well as inner-gas and water-cooled windings.

Call Us Today!

If you have additional technical questions, please call or email Bill Moore at (614) 488-1151 x125, bmoore@national-electric-coil.com or Steve Jeney at (614) 488-1151 x105, sjeney@national-electric-coil.com. NEC can help you with the initial inspections for any imminent conditions or problems and perform the necessary testing.



Specialized Engineering Solution™ 403-FL-0406