

# High-power Motor Test System

## Background

With the new high-power motor test system, Westinghouse has expanded full functional testing capabilities for the nuclear industry. With the addition of the following upgrades, Westinghouse is even better able to serve its customers.

- Overall motor power range up to 15,000 horsepower (hp)
- Live web broadcast of the test in real-time
- Sound-isolated control room
- In-house testing of Westinghouse and other OEM reactor coolant pump motors

## Description

The high-power motor test system is capable of testing and monitoring up to a 15,000-horsepower (hp) motor at no load or a 3,000-hp motor at full load.

The high-power motor test system is designed using components from the leading testing manufacturers in the industry. This state-of-the-art system offers customers a “one-stop shop” to handle a variety of testing needs, from the smallest auxiliary motors to the largest reactor coolant pump motors in the nuclear industry, such as a pressurized water reactor (PWR) reactor coolant pump (RCP) motor or a boiling water reactor (BWR) primary coolant pump motor.

The test system uses Microsoft Windows®-based data collection software, which provides the customer with complete documentation in a user-friendly report format for each motor tested. The report includes detailed information, including the following:

temperature data (such as bearing, stator winding, cooling water and oil temperature), power data (such as voltage, current and watts), and vibration data in any customer-required unit or format (such as acceleration, velocity, displacement and speed). The data are stored electronically for quicker test-report generation and future retrieval.

The system can provide two motor-starting methods: full-voltage and reduced-voltage (“soft-start”), depending on customer requirements. Reduced-voltage starting is a great option to reduce the risk of damage when starting a motor in an unknown, as-received condition. Additionally, voltage output through 14,100 VAC (voltage alternating current) is available for customer-specified, over-voltage testing.

## Benefits

If requested, this system also has the capability for customers to virtually view the testing and data collection from their home or office.



Main power cabinet

Westinghouse provides the nuclear industry access to experienced quality and safety-conscious resources for pump, motor and component engineering, repair and testing services. The new high-power motor test system continues that tradition by providing customers with a reliable and versatile avenue for tracking testing and data collection.

Customers have the option to witness motor testing and data collection in the new, state-of-the-art control room. The control room is designed as a full-service office, providing the customer with a comfortable environment to view the test and data collection on multiple screens. The office is wired for Internet and phone access, allowing customers to stay connected with day-to-day activities as well.

### Experience

Westinghouse has experience with a wide range of Westinghouse and non-Westinghouse reactor coolant pump motors.

Westinghouse has successfully tested motors up to 11,000 hp.

At this time, the Westinghouse test set is capable of no-load testing of motors of up to 15,000 hp using a reduced voltage (“soft start”) starting method.

Westinghouse can perform load tests using a hydraulic (water brake) Dynamometer for both horizontal and vertical motors.



Non-Westinghouse reactor coolant pump motor set up for final performance test



State-of-the-art control room

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Westinghouse reactor coolant pump motor after final performance test

Westinghouse Electric Company  
1000 Westinghouse Drive  
Cranberry Township, PA 16066

[www.westinghousenuclear.com](http://www.westinghousenuclear.com)