

Rod Drop Test Systems

Background

Westinghouse now offers both fixed-install and portable rod drop test systems for customers who have analog rod position indication (ARPI) and digital rod position indication (DRPI) system hardware. These systems reduce critical path time by automatically analyzing the data from each rod during a reactor trip and displaying the results. Additionally, they have the ability to trend and analyze rod drops over time. Westinghouse has over 40 years of operating experience with rod drop systems, and the new rod drop test systems add functionality and modern hardware to an already successful design.

Description

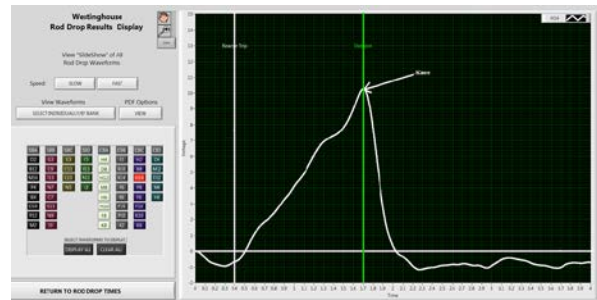
Plant technical specifications require rod drop time testing following a refueling outage to ensure that the rods insert properly and within the time-response requirements of the plant's safety analysis. A rod drop event occurs from de-energizing the control rod drive mechanism (CRDM) until the rod is 90 percent inserted. Each control rod has a dash pot at the 90 percent inserted height in order to decelerate the rod prior to reaching the end of travel. Also included in rod drop test analysis is any observation of rod recoil off of the core bottom after dash pot entry.

Both Westinghouse rod drop test systems feature:

- One-click setup to capture the raw data for each rod
- Capability of calculating the time from de-energized CRDM/reactor trip signal to dash pot entry
- Graphical display of results
- Ability to perform trending analysis
- A variety of methods of saving/printing the data, including customized final PDF reports
- Results that are duplicated and saved on both a primary and a backup hard drive
- Option to record one, multiple or all rod drops at once

Fixed Installation Rod Drop Test Computer – 1077D15G01

Consists of input/output boards, an industrial personal computer running Windows® 7 and LabVIEW™ software for data acquisition, and a relay panel connected to ARPI-system hardware.



View Current or Historical Data on Demand

Benefits

- Once enabled, automatically senses a reactor trip and begins recording data and calculating results
- Replaces the original CERPI (rack mount) rod drop test computer with the same hardware interface

Portable Rod Drop Test Computer – 1077D16G01

- Consists of a portable computer running Windows 7 and LabVIEW software for data acquisition
- Includes a custom field cable for connecting to test points and to the reactor trip signal
- Self-contained, easily transportable unit
- Quickly connects to existing ARPI or DRPI system hardware
- Once enabled, automatically senses a reactor trip and begins recording data and calculating results
- One unit can be used for multiple plant configurations



Portable Rod Drop Test Computer

Experience

The technology is successfully installed at five Westinghouse operating plants.



Rugged, Militarized Chassis



Hardware Connections and Cabling Included

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