Background
Westinghouse has provided equipment to support all aspects of nuclear fuel handling since 1970.

Description
The Model GR system is offered in two basic configurations:
1. A complete replacement boiling water reactor refueling bridge
2. A control system or controls upgrade for an existing PaR or Stearns-Roger refueling bridge

The Model GR systems include:
• The low maintenance, FUELMASTER® mast
• New left- and right-hand controllers
• Industrial touchscreen controls and status displays showing position and load
• Control upgrades including FUELNET®, Westinghouse’s proprietary software system that facilitates safe, automatic and manual control of fuel movement
• New servo motor drive systems
• Camera system options – above water and in-mast cameras, controllers and displays
• Cable management solutions, including cable reels, cable tracks and festoons
• Load-weighing systems and displays for fuel
• Auxiliary hoists with load weighing and integral displays independent of the fuel-handling system
• Pneumatic system upgrade

Benefits
• Increase bridge, trolley and hoist speeds to 60, 40, and 50 feet per minute, respectively
• Increase machine performance and reliability using a proven design
• Brushless servo drives provide maintenance-free, smooth operation and high torque as required to maintain commanded speed, which can compensate for poor rail conditions
• Provides integral maintenance receptacles on the equipment
• Improve component tolerance to a broader range of environmental conditions, such as radiation, temperature and humidity
• Reduce maintenance with brushless servo motors
• Absolute encoder positioning system retains position information upon loss of power and updates position when moved without power

Key elements of the Westinghouse solution include:
• Programmable logic controller and human-machine interface software customized to the site
• Engineering drawings
• Documentation for factory testing, site testing and installation
• Training performed on customer machines
• Cyber security addressed to enhance safety