

# SureTrac Fuel Pool Index System

## Background

The SureTrac<sup>®</sup> nuclear fuel-pool indexing system is an innovative approach developed by Westinghouse to independently verify the position of the fuel-handling tooling utilized in transporting nuclear fuel or fuel components. The system is applicable to Westinghouse and non-Westinghouse plants.

## Description

The entirely portable system accomplishes this by means of two wireless laser-tracking devices and a wireless pressure sensor that are temporarily mounted on the fuel-handling machine. The tracking devices send X, Y, Z position information to a laptop computer that processes it.

The SureTrac computer software has a virtual spent fuel pool that represents the actual pool. When the crane is over a fuel rack, the SureTrac software automatically zooms-in on the rack and displays the actual cell location. The fuel cell alphanumeric position is sent to an electric sign with a wireless data link.

Position-only mode displays the current fuel cell location on the electric sign. It does not require a Z elevation sensor. When a Z elevation sensor is included, the offload, insert shuffle and reload modes have the crane moves stored in a database. If the operator begins to deviate from the programmed sequence, an audible alarm sounds to warn of an error.



Articulated retrieval tool (ART)

## Setup/Calibration

Setup includes calibration of the system in the field prior to use. The calibration is performed by positioning a fuel-handling tool into the two opposite corner cells of each fuel rack in the pool and recording the position information into the computer. The system uses this information to then store all of the remaining cell locations in the entire fuel pool on the hard drive of a laptop computer. Once completed, this process is saved and future setup can be performed in a fraction of the time. The entire system can be powered down and restarted without losing calibration.

## ISO 9001 Compliance

The SureTrac fuel-pool indexing system and related services are provided in accordance with the Westinghouse Quality Management System, which is in compliance with ISO 9001 requirements.

## Frequency/Laser Class

The wireless data links use license-free, 2.4-GHz, lowpower frequency hopping spread spectrum technology.

The lasers are Class 2 eye-safe.

## Specifications

Laser accuracy	+/- 3 mm
Laser range	50 Meters - white or yellow paint 100 Meters - special target
Laser data rate	0.5 Sec
System data rate	0.5 Sec
Input power	100 to 240 VAC 50/60 Hz
Pressure sensor	7.2 VDC Battery (5 days continuous use)

## Options

- A remote SureTrac computer can be located in the control room and communicate via the LAN to the SureTrac laptop in the fuel building. All of the move information is driven from the control room SureTrac computer. The move sequencing is automatic. ShuffleWorks® can send directional information to automatically update SureTrac and receive the current alphanumeric cell location from SureTrac via the LAN.
- Position information can be sent over the LAN to automatically and remotely update TracWorks® fuel data management system's real-time movement monitoring module (RTMM).
- The electric sign current position can be sent to a remote plant computer over the LAN.

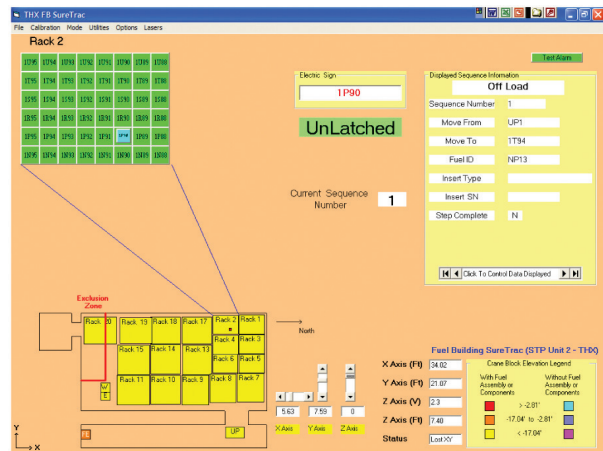
## Benefits

- Visual position display/verification
- Laser tracking
- User-friendly

- Computer data storage and retrieval

## Experience

SureTrac has been used in the field successfully at more than 14 plants since 2000.



SureTrac offload display

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