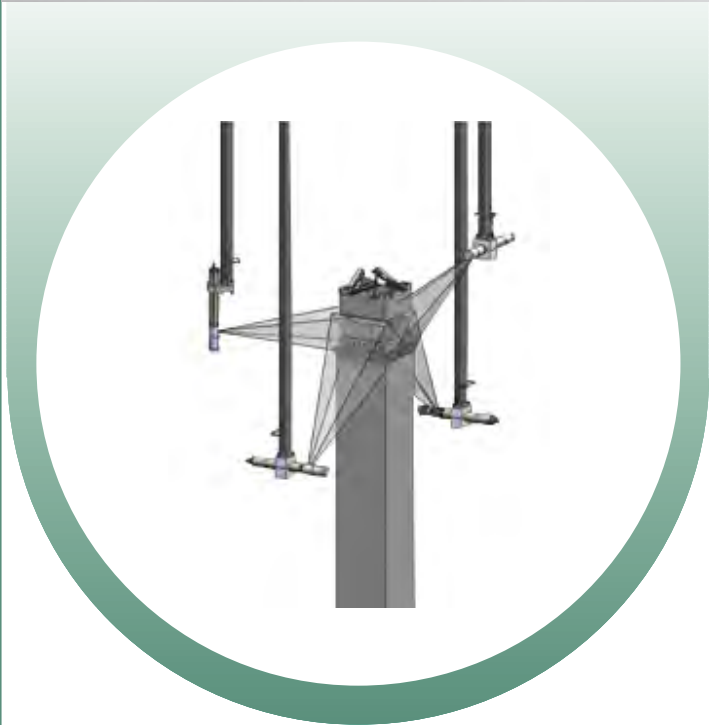


# Quad-Side Nuclear Fuel Inspection System



**Allows simultaneous inspection of all four sides of fuel bundle while moving through the transfer canal and upender**

**Expedited integrity inspection results in significant critical path time savings**

**IP-addressable for monitoring via facility's Local Area Network**

**Utilize four radiation tolerant cameras with right angle optics**

*ROS has been manufacturing an array of harsh environment cameras, lights, positioners, and specialized systems designed for oceanographic, nuclear, industrial, and military applications for over 36 years.*



## ***Versatile, Radiation Hardened, Viewing / Recording System for In-motion Fuel Inspection***

The ROS Quad-Side Fuel Inspection System is an imperative time-saver for refueling operations. The modular system is deployed above the fuel upender such that fuel assemblies can be inspected during core offload and reload without impacting critical path.

The four-sided system employs four cameras with integral lighting, pole-deployed from a support surface frame. The support frame is designed to be installed at the refueling floor elevation.

The cameras are connected to the control station and are capable of viewing and recording all videos simultaneously. The control console can be selectively accessed via your plant's Local Area Network, so that Reactor Engineers and Managers can monitor fuel inspection from outside containment.

Users have found the cost/time savings when employing the Quad-Side System to be so significant that the system is "paid for" during just the first usage. The high radiation tolerance of the cameras allows for use of the system through several outages without need for replacement.

ROS' Quad-Side Systems have been utilized at Comanche Peak, McGuire, Catawba, Oconee and Wolf Creek. Outage Managers found that over 4 hours of critical path time was saved solely by the use of the Quad-Side Fuel Inspection System. The managers have stated, "the system definitely pays for itself quickly."

# Quad-Side Nuclear Fuel Inspection System

## SYSTEM

Composition:

- 1 x Viewing, Recording and Control Console
- 1 x Support Frame to be Installed at Refueling Floor Elevation
- 4 x 38m (125 ft) Cables
- 4 x Adjustable Pole Assemblies with Camera Brackets
- 4 x Radiation Tolerant Cameras with Right Angle Optics and Integral Lighting

## CONTROL CONSOLE

Underwater Interface: Independent Control of all Camera Functions  
Processing: Ruggedized PC Based  
Viewing: Slide-out LCD Monitor, Split Screens  
Recording: NVR/DVR Server/Client Software  
Networking: IP Addressable, All Functions Available Remotely

## TOP SUPPORT FRAME:

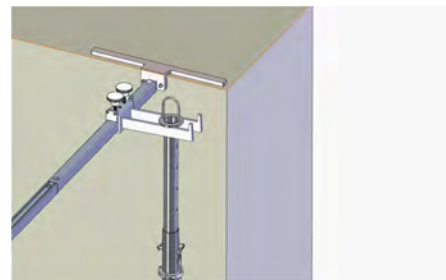
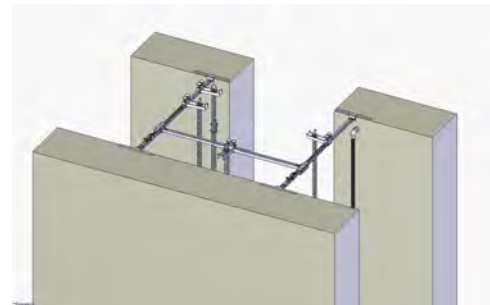
Material: Lightweight Aluminum  
Size: Customized for the Plant Transfer Canal and Obstacles  
Pole Brackets: Provide Lateral Adjustments

## ADJUSTABLE POLE ASSEMBLIES

Material: Stainless Steel for Strength  
Adjustability: Every 75mm (3") for the Top Portion  
Length: Customized for the Plants Needs

## RADIATION TOLERANT CAMERAS:

Integral Dose:  $2 \times 10^8$  R (2000 kGy)  
Dose Rate:  $2 \times 10^6$  R/h (20 kGy/h)  
Material: Stainless Steel



Specifications subject to change without notice

98-54004 REV B



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