## About AREVA TN

AREVA TN, a division of AREVA Inc., is a leader in the American nuclear market offering innovative total systems solutions for used fuel and radioactive waste management and transportation. More than 50 percent of American nuclear plant operators use AREVA TN's used fuel storage or transport solutions, irradiated waste removal and processing, and pool to pad services.

As part of AREVA, the global leader in nuclear technology, AREVA TN offers the industry an unparalleled level of engineering, technical and logistics expertise.

AREVA TN's track record of providing safe storage and transportation of used fuel is driven by state-of-the-art products and services, innovative engineering solutions, and integrity in meeting customer expectations for low-dose and error-free campaigns. AREVA TN customers include utilities, reactor operators, research reactors and the U.S. government.

AREVA TN's products are marked by the highest standard of safety, uncompromising commitment to quality and operational dependability, and "as promised" service integrity.

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# Pool to Pad Services

## Faster Deployment, Shorter Loading Campaigns, Lower Dose Exposure to Your Crew

AREVA TN's Pool to Pad Service is a comprehensive solution to ensure utilities manage their used fuel efficiently and cost-effectively with minimal risk. AREVA TN has a proven track record on ISFSI startup projects, and has participated in campaigns at more than 20 U.S. sites. AREVA has moved more than 20,000 fuel assemblies without incident.

### Scope of Services

Before the actual campaign begins, AREVA TN's team analyzes the site and establishes site-specific pool to pad procedures to include:

- 50.59 and 72.48 screenings / evaluations
- NUHOMS® SAT-developed training program
- Dry run plans
- Readiness assessments
- 72.212 compliance reports

The team also assists with component receipt inspections, equipment pre-operational checkout and testing, and pre-Nuclear Regulatory Commission (NRC) and NRC dry run activities.

### TEAM Management Model

Transnuclear's Enhanced and Agile Management (TEAM) approach ensures streamlined, cost-efficient and safe used fuel loading. AREVA TN's managers and supervisors plan and execute the loading campaign while highly-trained AREVA fuel handlers perform canister loading and unloading activities. Welders are hand-picked from our fabricator shops, and NUHOMS® University trains the entire highly-proficient team in all aspects of the loading campaign. Whether for PWR or BWR, vertical or horizontal, the AREVA TN team has the proven performance for safety, low dose, cost confidence and consistently paced loading frequency of one canister per week.

### "As Promised" Delivery

The results are remarkable! AREVA TN's Pool to Pad TEAM approach has resulted in more than 70 consecutive loadings on schedule and on budget!

Pool to Pad team performs several functions including:

- Used fuel loading into Dry Shielded Canisters (DSCs)
- Inspection, confirmation and documentation of correct fuel loading
- DSC shield plug and lid placement
- Turnkey welding, including equipment; ASME Section IX qualified welders; filler material; QA/QC and NDE services; and helium leak testing of the closure weld as specified in the certificate
- Vacuum drying
- Helium backfill
- Transport to the ISFSI
- Transfer to the Horizontal Storage Module (HSM)
- Post-loading decontamination services
- Completed documentation packages
- Preparation and storage of ancillary equipment for the next campaign.

AREVA
forward-looking energy

## The “As Promised” Advantage

One supplier for multiple services:

- NUHOMS® canisters and ancillaries
- Leased equipment
- Site preparation and readiness
- Trained, certified professionals and personnel
- Schedule flexibility
- Project management
- AREVA Automated Welding System (AAWS)
- Vacuum Drying System (VDS)

## NUHOMS® University

AREVA TN has created NUHOMS® University as an industry “best training” model. NUHOMS® University, when combined with AREVA’s Lynchburg Fuel Training Center, is the only domestic facility that is equipped to enable training on all aspects of NUHOMS® operations (except the heavy lifts into and out of the Spent Fuel Pool) including welding, processing, vacuum drying, helium backfill, helium leak testing, lid removal and NUHOMS® alignment operations.

NUHOMS® University was created to respond to customer expectations for:

- Human performance in all aspects of nuclear operations
- A comprehensive Systematic Approach to Training (SAT) modeled on INPO’s industry standard
- Trainees that work with real, life-sized equipment
- An in-depth and comprehensive training course taught by industry experts with credentials in licensed reactor operations and INPO-certified training

The training is normally led by the upcoming project’s project coordinator, thus it serves as a real-life practice for the upcoming project.

NUHOMS® University is an SAT-based training program which has been reviewed and approved for use by utilities. It is delivered in a 5-6 week time frame at our facility in Aiken, SC. This training is normally conducted twice per year (Feb-March) and (July-August). Utility involvement is encouraged.

NUHOMS® University qualifies personnel in roles rather than tasks much like that of an operating utility. The program consists of 80 hours of NUHOMS® classroom training and exams and 104 hours of NUHOMS® OJT and JPM Exams.

Training modules consist of:

- NUHOMS® General Systems Overview
- NUHOMS® Transfer Equipment Operations
- NUHOMS® Onsite Transfer Cask/DSC Prep
- NUHOMS® Draining and Drying Operations
- NUHOMS® Alignment Operations
- NUHOMS® Operating Experience
- AREVA Automated Welding System

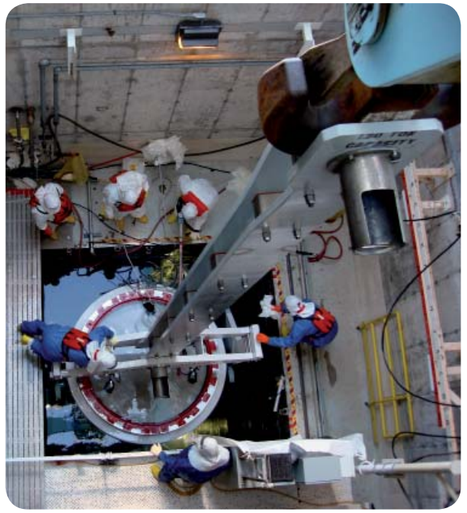
Additionally, NUHOMS® U graduates have completed OSHA Forklift, Aerial Lift and Rigging Training which will include all learning objectives from the respective sites.

NUHOMS® U graduates receive certifications in the following areas:

- NUHOMS® Shift Manager
- NUHOMS® Cask Loading Lead
- NUHOMS® Vacuum Drying Operator
- AREVA Automated Welding System Operator
- NUHOMS® Trailer Operator
- NUHOMS® Alignment Operator

This process has been accepted by the NRC for dry run demonstrations for welding and vacuum drying operations.

AREVA TN’s NUHOMS® University has the ability to replicate a loading cycle in its entirety, including Welding, Vacuum Drying, Helium Backfill, Transfer Trailer operations, Transfer Cask docking, and DSC insertion and retraction.



# Project Showcase

**Plant 1 (2012)**
Nine 32PT DSCs
24,000 safe work hours
Lowest exposure: 94 mRem
One system per week
$0 in change orders

**Plant 2 (2013)**
Ten 61BTH DSCs
26,000 safe work hours
Lowest exposure: 331 mRem
One system per week
$0 in change orders

**Plant 3 (2013)**
Eight 61BTH DSCs
29,000 safe work hours
Lowest exposure: 320 mRem
One system per week
$0 in change orders

**Plant 4 (2013)**
Twelve 32PTH DSCs
33,000 safe work hours
Lowest exposure: 93 mRem
One system per week
$0 in change orders

**Plant 5 (2013)**
Eight 32PTH DSCs
22,000 safe work hours
Lowest exposure: 50.5 mRem
One system per week
$0 in change orders

**Plant 6 (2014)**
Ten 61BTH DSCs
26,000 safe work hours
Lowest exposure: 200.5 mRem
One system per week
$0 in change orders