NAC INTERNATIONAL

PACKAGING AND TRANSPORTATION SERVICES FOR USED NUCLEAR FUEL

HIGHLIGHTS:

- Over 3,800 shipments from 70 nuclear facilities from 30+ countries on 6 continents completed.
- Cask loading equipment can handle both wet loading and dry loading.
- NAC can perform all services for the full transportation scope.

CASK AND PACKAGING

The versatility of the NAC International Legal Weight Truck (NAC-LWT) has made it a popular transport cask for the shipment of research and test reactor spent fuel, commercial nuclear spent fuel, and other irradiated materials. The NAC-LWT is certified according to the latest IAEA and U.S. NRC requirements and more than 30 countries have validated its Certificate of Compliance (CoC). Over 70 CoC amendments have been obtained for specific nuclear materials.

The NAC-LWT cask loading equipment provides handling flexibility for a wide range of loading conditions, from wet loading in a pool, to dry loading at facilities with challenging infrastructure limitations. These limitations include: small pools, limited facility space, limited crane capacity and limited floor loading capability, among others.

TRANSPORTATION

In conformance with the latest regulations, NAC can perform all services necessary for the full transportation scope, including:

- Assess route; obtain route approval
- Prepare transportation and security plans
- Notify state, NRC, DOT and other involved parties
- Book carrier, coordinate escort, track shipment, and other support services.

The NAC-LWT cask system is the **industry workhorse** of international spent nuclear fuel transportation casks.

LOADING SERVICES

NAC provides skilled and experienced personnel to support the loading and unloading operations and material preparation. Our staff are very familiar with transportation and packaging processes, cask systems and applicable regulations.

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CASK ATTRIBUTE	NAC-LWT SPECIFICATION
Capacity (assemblies)	1 PWR, 2 BWR, other reasearch reactor fuel types
Weight (lb.)	
Empty	48,000
Loaded	51,000
Thermal	
Design Heat Rejection (kW)	2.5
Maximum Fuel Clad Temp (°F)	653
Operating Temperature (°F)	228 (cask radial surface; max.)
Maximum Burnup (GWD/MTU)	35
Shape	Cylindrical
Dimensions (in.)	
Overall Length w/o Impact Limiters	199.800
Overall Length w/ Impact Limiters	231.800
Overall Cross Section w/o Impact Limiters	44.200
Overall Cross Section w/ Impact Limiters	65.300
Cavity Length	177.900
Cavity Cross Section	13.375
Inner Wall Thickness	0.750
Lead Shield Wall Thickness	5.750
Outer Shell Wall Thickness	1.200
Lid Thickness	11.300
Bottom Thickness	10.500
Basket Length	178.000
Basket Cross Section	13.300
Neutron Shield (in.)	
Neutron Shield Tank Thickness	5.000
Neutron Shield Tank Thickness	0.250
Materials of Construction	
Cask Body	Stainless Steel/Lead
Basket	Stainless Steel
Neutron Shielding	Borated Water/Ethylene Glycol
Cavity Atmosphere	He
Outside Surface Dose (mrem/hr)	<100
Maximum Leak Rate (atm-cm^3/sec)	1.0 x 10^{-7}

APPROVED NAC-LWT CONTENTS:

- 1 PWR/2 BWR Fuel Assemblies (FA)
- LWR Fuel Rods
- TPBARs
- Metallic Fuel Rods
- HEUNL Material
- CEUSP/Na Bonded
- MTR Fuel (various types)
- 42 DIDO Fuel
- TRIGA Fuel
- NRU/NRX FA
- SLOWPOKE Fuel
- Source Material

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