## **DEVELOPED IN THE U.S...SERVING THE WORLD**

Nearly five decades experience designing, licensing and deploying advanced technologies to package, store, transport and dispose nuclear materials, including used fuel and high level waste.

Eleven **Nuclear Fuel Cask Systems** Licensed in the U.S.

International **Cask Certificate** Validations

More than 40

More than 500 Storage and **Transport Systems** Delivered

More than 200 Packaging and Transport **Projects** 

Experience at More than 60 **Nuclear Facilities** Worldwide

> Kazakhstan BN-350 **Spent Fuel Disposi-**

tion Project, U.S.

**DOE NNSA** 

NAC successfully completed a multi-

year project to design and fabricate

services for BN-350 fuel and blanket

assemblies in Kazakhstan. This non-

packages and complete loading

proliferation focused packaging

campaign was conducted for DOE

the IAEA and Kazakhstan licensing

NNSA and in close coordination with

authorities. In the second phase, NAC

provided technical oversight support

delivery of 60 dual purpose spent fuel

storage casks to accommodate spent

fuel canisters at the BN-350 reactor

facility in Aktau, Kazakhstan.

to ORNL-UT-Battelle for the design,

licensing, fabrication, testing and

### U.S. Nuclear Material Removal Program, U.S. DOE NNSA

NAC is a key contractor supporting the U.S. Government National Nuclear Security Administration's (NNSA) Nuclear Material Removal Program to repatriate used highly enriched uranium (HEU) fuel and other nuclear materials from research and test reactors and commercial locations around the world. The purpose of this initiative is to prevent future use of these materials and to prevent these materials fall in the wrong hands. To achieve these ends, NAC deploys its certified NAC Legal Weight Truck (NAC-LWT) transport package. This NAC package is transported via multi-modals including truck, rail, and shipped across international borders while meeting all host nation and U.S. Government stringent security and licensing requirements. In addition, NAC has supported the Foreign Research Reactor program since the 1990s with the removal of HEU and LEU from numerous countries around the world.

### Doosan Cooperative Agreement Chinese Nuclear Spent Fuel Management

In August 2015, NAC signed an agreement with Doosan Heavy Industries and Construction in South Korea to jointly develop a Korean model of a spent fuel storage cask.

In January 2016, NAC entered into a contract with China National Nuclear Corporation Everclean Co., LTD and China Nuclear Energy Industry Corp. for supply of four new NAC-STC transportation casks and related ancillary equipment for high burnup spent fuel.

### **Trusted Supplier of Nuclear Fuel Cycle Solutions to Japan**

For more than two decades NAC has offered a broad range of nuclear fuel cycle services across the Japanese nuclear industry ranging from nuclear fuel cycle consulting, cask technology design and engineering services. This experience includes development of a dual purpose cask technology design, licensing and technical support for the JAPC Tokai spent fuel storage casks in collaboration with Hitachi Zosen, design of transfer systems to support Fukushima defueling efforts led by Toshiba, and a broad range of nuclear fuel cycle front end and backend consulting projects to most Japanese nuclear utilities. Working with Hitachi Zosen, the NAC-Hitz team now offers an integrated solution to design, licensing, fabricate and deploy advanced cask systems in Japan and abroad.



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## **TRUSTED WORLDWIDE** ... SAFE, SECURE STORAGE & TRANSPORT



### Dry Storage of High Level Waste, **U.S. DOE West Valley Site**

In November 2016, NAC successfully completed the safe deployment of 56 NAC-MPC cask systems at the West Valley Demonstration Project (WVDP) in West Valley, New York. The NAC-MPC systems were transferred

and placed onto the newly built onsite dry storage facility. This project sets an industry record where MPCbased systems are relied upon to safely store vitrified high level waste (HLW) at a U.S. Department of Energy nuclear decommissioning project. NAC performed this scope under contract with CH2M HILL BWXT West Valley, LLC (CHBWV) working in collaboration with highly skilled site resources to complete the safe loading of the 56 HLW canisters.

### **Technology Solution for Highly Radioactive Cesium &** Strontium Capsules, U.S. DOE Hanford Site

NAC was awarded a contract by CH2M HILL Plateau Remediation Company (CHPRC) for the supply of NAC-Multi-Purpose Canister (NAC-MPC) dry storage systems and specialized technology to safely package and store 1,936 radioactive capsules currently stored at the Waste Encapsulation and Storage Facility (WESF) at the U.S. Department of Energy's Site in Washington State. The capsules which contain a total of 67 million curies of radioactivity were generated during the chemical processing of defense-related materials at the Hanford Site. DOE currently plans to implement on-site extended storage of the WESF capsules relying on commercially available dry storage technology and best industry practices.

**SPENT FUEL HIGH LEVEL WASTE GREATER THAN CLASS C WASTE IRRADIATED SOURCES** 



NAC is a key team member on the Waste Control Specialists LLC (WCS) team working to develop a Consolidated Interim Storage Facility for used nuclear fuel and reactor-generated Greater Than Class C waste. The WCS-led team which includes NAC and Areva as partners submitted an application to the U.S. Nuclear Regulatory Commission (NRC) in April 2016 and on January 26, the NRC announced docketing and acceptance for formal review of the WCS application. WCS expects the CISF to be licensed, constructed and operational by 2021. NAC technology comprise approximately 20 percent of existing multi-purpose container dry storage systems in the U.S., including 57 percent of used nuclear fuel stored at sites where there is no longer an operating nuclear facility.



# **Spent Nuclear Fuel Shipments**

CANADA CHIN Hawaiian BRAZIL *Founded in 1968 and with corporate headquarters* in Norcross, Georgia, NAC International has been serving the U.S. and international nuclear industry for five decades. NAC is entrusted with the safe, secure storage and transport of nuclear fuel, nuclear waste, highly irradiated sources and materials in the U.S. and around the world.

