

LIN | LOX Storage Solutions



For 25 years AT&V has pioneered improvements in the design and construction of LIN/LOX tanks. These advancements improved cost, schedules, and performance.

AMERICAN TANK & VESSEL, INC.





Full containment ammonia storage

Introduction

AT&V 42 years and 4,000 projects

AT&V engineers have been involved in designing and constructing LNG tanks and terminals from as early as the late-50s, working on projects from ammonia to LNG from Brazil to Canada.

AT&V has constructed thousands of projects providing a unique service, with the in-house ability to deliver a single tank or an entire terminal. Combined with patented and proprietary technology systems, AT&V can offer the most advanced applications for your tank or terminal needs.

Contact AT&V today for storage of ammonia, LNG, LPG, hydrogen, LIN/LOX, ethane and more. We can help you with your toughest installation demands and find a storage solution to meet your needs.



Full containment LNG storage





Technology & Experience

AT&V realizes the importance of advancing the technology associated with your industry. In addition, AT&V is involved with ILTA, API, CGA, NFPA, AWS, AMPP, ASME, FERC, PHMSA, and other leading organizations. This, combined with AT&V's in-house research and development, is helping to pioneer improvements in the storage of cryogenic and refrigerated products.

AT&V Management started work on flat-bottom LNG storage tank designs in the 1950s. Other team managers have decades of LNG experience in design, fabrication, field erection, and project management. This experience involves all major US Codes, industry standards, and proprietary systems developed by AT&V.

30

YEARS OF TECHNOLOGY
DEVELOPMENT

95%

OF AT&V'S BUSINESS COMES
FROM REPEAT CUSTOMERS

10

YEARS OF ZERO
TRIR OUT OF 14

1.5%

FOR CHANGE ORDERS RATE
OVER THE PAST 5 YEARS



*Full containment
LNG completed on
time during COVID*

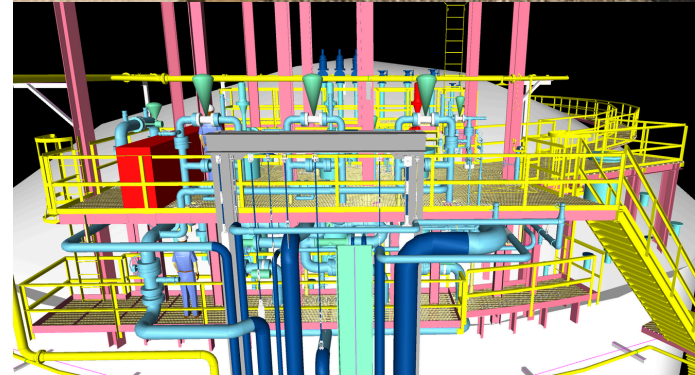
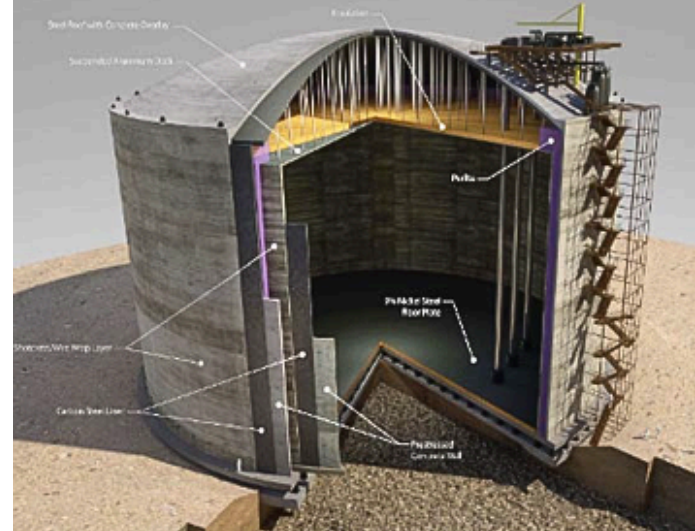
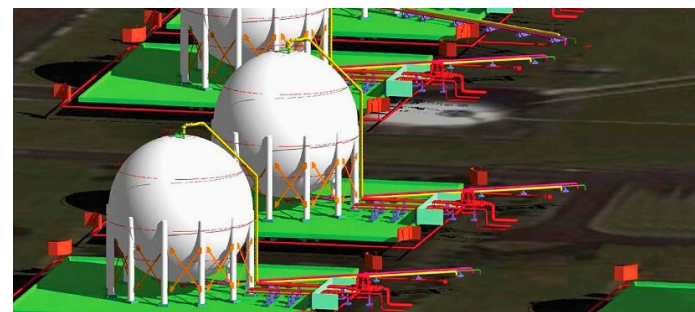


Design History

Solving customer challenges is what AT&V is built to do

The AT&V/NV5 team supports engineering disciplines for all aspects of cryogenic and refrigerated tank design, construction, operation, erection, and testing. AT&V's in-house engineering supports proprietary technology to improve welding systems, NDE, safety, emissions operations, and a variety of other issues for storage and operation.

Our engineering team supports turnkey terminals including siting, permits, layouts, electrical/instrumentation, civil, mechanical, process, automation, inbound/outbound applications, and miscellaneous disciplines to customize your applications. AT&V's patented and proprietary technologies can improve the performance and overall value of your terminal applications. Whether the application requires single containment or full containment storage, Our engineering team has the experience.



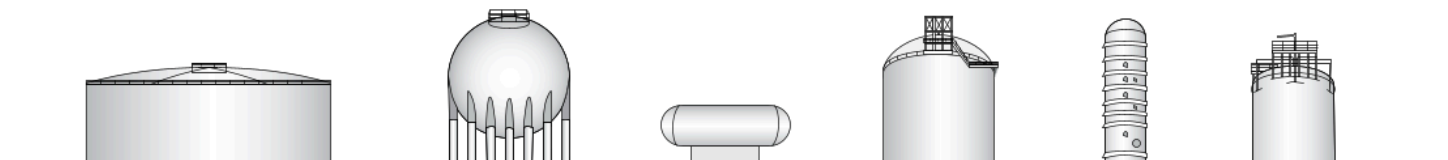
60+

YEARS OF LNG STORAGE DESIGN

40+

YEARS OF AMMONIA STORAGE DESIGN

TYPES OF GAS STORAGE	SIZE RANGE	PRESSURE RANGE	DELIVERY MODE
Vertical Vessels (API-620 and ASME)	10,000 - 500,000 Gal.	5 - 2000 psig	A, B, C, & D
Horizontal Vessels (API-620 and ASME)	10,000 - 1MM Gal.	5 - 2000 psig	A, B, C, & D
Cargo Tanks of Gas Carriers (IGC Code)	10,000 - 2MM Gal.	5 - 200 psig	C & D
Spheres (API-620 and ASME)	10,000 - 3MM Gal.	5 - 400 psig	C & D
API-620 Single Containment Steel/Concrete	500,000 - 40MM Gal.	2 - 15 psig	C & D
API-620 Double Containment Steel/Concrete	500,000 - 40MM Gal.	2 - 15 psig	C & D
API-620 Full Containment Steel/Concrete	500,000 - 40MM Gal.	2 - 15 psig	C & D



Delivery Modes: A = Truck, B = Rail, C = Water, D = Site Vessels and Spheres can be Single Walled or Double Walled.



U.S. Fabrication

In-house capacity for on time projects

Fabrication Equipment

- Over 200 acres of lay down
- Over 300,000 sq. ft of fabrication under hook
- (6) sets of plate rolls
- (3) forming presses

Largest field tank fabrication in U.S.

- Trucking out of all (3) facilities
- Rail out of Lucedale and Mossport
- Barge or ship out of Mossport water facility

Shop Built Vessels

- Max vessel diameter: over 50'
- Max vessel length: over 500'
- Rolled plate: up to 4 ½" x 20'
- Max dished or formed: 7"
- PWHT: 33' diameter x 220' length



150 acre Mississippi waterfront plant



80 acre Gulf Coast plant



Houston export/fabrication plant



Site Construction

Projects completed around the world

AT&V's construction management represents the best talent in the world, coupled with AT&V's philosophy of empowerment. Through proper education, tooling and support AT&V empowers their management to set new standards for our customers.

AT&V's varied experience from rainforest to deserts, from high density populations to remote islands, proves that the AT&V formula works. AT&V has established procedures and a track record that yields consistent high performance. AT&V's approach to your project will identify the parameters that require special attention to ensure that the appropriate adjustments are incorporated.

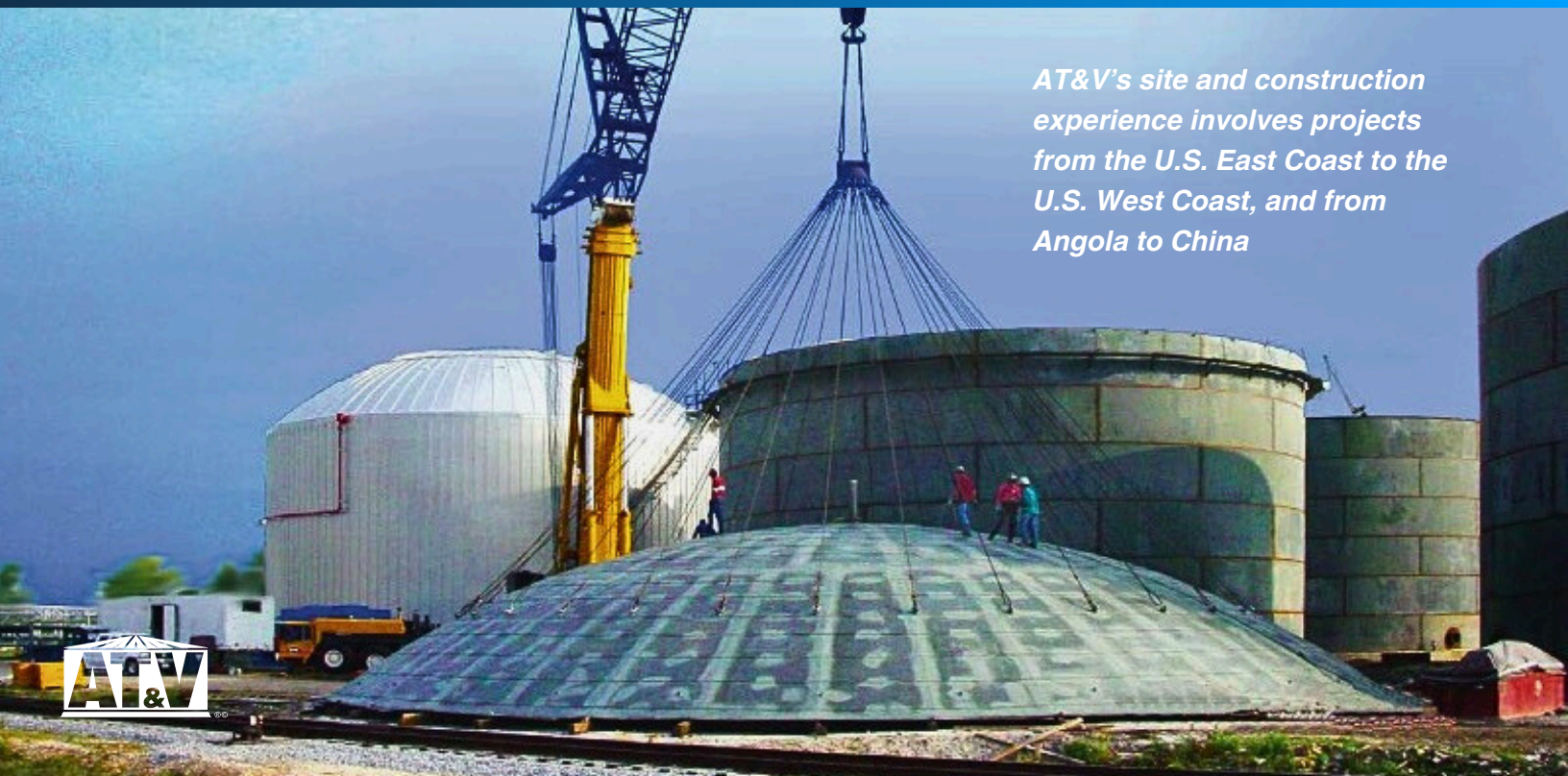
AT&V's construction staff, technology, empowerment, equipment and corporate support make the difference no matter what the location.



World class ammonia facility



Single containment LNG storage



AT&V's site and construction experience involves projects from the U.S. East Coast to the U.S. West Coast, and from Angola to China





Completed 3 months ahead of schedule



*Ammonia terminal on time during COVID
U.S. industry leader*



*Civil, tanks, and painting 5 months,
no overtime*

Industry-Leading Schedules

The art of delivering on-time AT&V achieves industry-leading schedules through a variety of innovative concepts.

With targeted markets ranging from aerospace to energy, our team prides itself on delivering on-time results without compromising safety, quality, or value.

AT&V's performance standards and goals are directed by safety, unsurpassed quality, and maintain schedules that are significantly better than industry-available time frames.

100%

SCHEDULES MET
DURING COVID



Safety

10 years of total company zero (0) TRIR, leads the industry

AT&V's commitment to safety has yielded results year after year. Decades of manhours have been dedicated to creating a streamline procedure and regiment, so our customers, friends, and family can be safe. Having superior equipment fosters a safe work environment, but first and foremost is having trained professionals who are driven to maintain safe work conditions.



Select Storage Option References



EPC of world class ammonia terminal with full containment storage
– **Houston, TX, USA**

Shop fabricated 27' dia. x 130' ASME Section VIII Div. 2 PWHT, 100% radiograph and insulated shipped by water
– **AT&V Mossport, MS, USA**



Engineering, procurement, and fabrication of API-620 Q LNG tank with submerged pumps and process support
– **Paulina, Brazil**

Design and construction of (1) – 75' diameter ASME Section VIII Div. I sphere, PWHT
– **Freeport, TX, USA**



Engineering, procurement, fabrication and field erection of API-620 R LPG tank with valves, vents, instrumentation and process support
– **Chesapeake, VA, U.S.A.**

EPC for (2) ASME dual service spheres for low temperature and pressurized storage .
– **Lake Charles, LA, USA**



Full containment PHMSA/FERC LNG storage tank built in record time with flawless safety.
– **Fairbanks, AK, USA**

Engineering, procurement, and fabrication of ASME Section VIII Div. II reactor, 28' x 260' tall
– **Santos, Brazil**



EPC for 110' tall API-620 propane refrigerated service tank, foundation, insulation
– **Equatorial Guinea, West Africa**

EPC for ASME sphere for the storage of hydrocarbons including foundation, fireproofing/sprinkler system, painting, etc.
– **Houston, TX, USA**



EPC for full containment PHMSA LNG peak shaving facility. Schedule completed on time during COVID.
– **Bethlehem, PA, USA**

EPC for API 620 refrigerated storage tank including foundation, insulation, venting and piping.
– **Houston, TX, USA**

AT&V – your partner for large vessels, flat bottom and sphere storage systems supporting complete balance of plant storage requirements with a goal for customer value.

AT&V Turnkey Terminals

AT&V's turnkey experience involves all disciplines of a hydrocarbon terminal, from financing to commissioning.

AT&V has been delivering a balance of plant terminals since the mid-1980s and has performed the work inside and outside the United States. Projects have ranged from LNG storage in Brazil to LPG storage in Africa.

AT&V's turnkey hydrocarbon terminals also support the following:

- Permitting
- Full design capabilities
- Liability management of targets
- Finance & financial analysis
- In-house equipment fabrication
- Patented and award-winning technology
- Self-performed major construction
- Industry-leading schedule performance
- Exemplary worldwide safety record
- Full commissioning and operations service

If you would like to know more about AT&V's turnkey terminals and services, please visit our website for a full review.



The family of AT&V companies, along with proven subcontractors, has given AT&V the ability to deliver turnkey LNG/LPG facilities at a variety of locations.



Customer Value

Maximize your value with AT&V

Over the last 40 years, AT&V customers helped develop the Value Driven Project. This passion to service customers has helped AT&V build a history of low change order rates.

AT&V's history of low corporate overhead, no debt, and incentives for performance help drive the company to create value for our customers. The market price for many contractors becomes a break-even job putting pressure on the corporations to have change orders while AT&V's overall cost is lower and therefore, change order rates are significantly reduced at AT&V. Our (5) year history shows that change orders were less than 1.5% on LNG and cryogenic projects taking no credit for reductions in scope or change orders that reduce the price.



AT&V can provide single, double, or full containment storage solutions.



AT&V Summary

The team with experience and customer results

- Completed dozens of LIN | LOX projects
- 60 years of LNG storage experience
- 30 years of IP development in hydrocarbon technology
- Completion of over 4,000 Projects
- Industry's best schedules
- Global experience since 1994
- 10 years of company-wide zero (0) TRIRs

"AT&V is driven by a desire to be a part of the solution that will re-purpose enterprises and infrastructure for a renewable future." - W.T. Cutts VP, Director at AT&V

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For additional information please visit www.at-v.com. Other AT&V offices and fabrication facilities information available upon request.

