

Certified by AECOM INC

# AECON-WACHS

Aecon-Wachs, in collaboration with our parent company Aecon Nuclear is a total solutions provider.

We offer services based on many decades of experience, in-depth knowledge, and a broad range of qualifications to support nuclear power clients in the construction, maintenance, and decommissioning of their plants.



Aecon-Wachs provides a full spectrum of Engineering, Procurement & Construction (EPC), maintenance and manufacturing services specifically tailored to meet the demanding requirements of the nuclear power industry.

## ▶ OUR CORE CAPABILITIES INCLUDE:



New Builds



Capital Projects



Module and Skid Fabrication



Operating Plants



Maintenance and Outage Support



Waste Management



Decommissioning



Mechanical, Electrical, Civil



Plant Equipment and Components



As part of Aecon Group, one of the largest, publicly-traded construction and infrastructure companies in North America, Aecon-Wachs offers clients single source solutions for virtually every aspect of nuclear plant construction, maintenance, and decommissioning:

- Heavy Civil Construction
- Small & Large Component Replacement
- Module and Process System Fabrication
- Structural and Pipe Fabrication
- Equipment Installation and Overhaul
- Electrical Distribution, Controls and Instrumentation Upgrade
- Specialty Welding and Machining
- Project Management (PMO)

## SAFETY IS OUR #1 CORE VALUE

We take great pride in ensuring our workers return home safe every day and demonstrate our commitment by:

- Engaging our leadership at all levels to ensure clear roles and responsibilities for the advancement of our Health & Safety Management System and its annual objectives.
- Developing a culture that engages and empowers our workforce to identify, report and control any physical or psychological hazards that are critical to their personal health and safety.
- Proactively identifying, assessing, controlling and eliminating risks by responding to inquiries, conducting audits and inspections, working closely with our employees, Joint Health & Safety Committees (JHSC) and Health and Safety representatives, and supporting training and learning opportunities to ensure a competent workforce to execute our work safely.
- Meeting or exceeding the regulatory requirements in the jurisdictions in which we operate.
- We remain committed to a “zero-injury” culture across our company, on every project site and in every work environment. Simply put, if we can’t do it safely, we don’t do it at all.





## EXPERIENCE

Aecon-Wachs has been working on nuclear plant projects and successfully providing services to one of the most demanding industries in the world.

- More than 1000 projects completed
- Construction and maintenance at nearly every nuclear facility across North America
- Industry leader for major refurbishment projects
- International project management and partnerships
- Synergistic partnerships with many technology companies

## PARTNERSHIP

As a partner-of-choice, Aecon-Wachs prioritizes client success.

- An active, collaborative team partner
- Integrated Teams, inclusive of partners and clients
- Strong, lasting relationships with like-minded companies and suppliers
- Greater accountability and excellence in execution, leading to consistently superior results

## PERFORMANCE

With more than 30 years of experience in the industry, Aecon-Wachs has developed a well-deserved reputation for quality, safety and delivery.

Every project is meticulously planned and rigorously rehearsed to minimize downtime. We consistently meet outage schedules and complete our projects, on-time and on-budget. Our in-house craft recruitment, vetting, weld-testing and in-processing program exceeds customer requirements and enables us to maintain the highest level of performance across our projects.

## ADDED VALUE

Aecon-Wachs has an extensive portfolio of services specifically designed to meet the construction and maintenance requirements of our nuclear utility clients.

- Work procedures, training programs and quality assurance systems are independently audited and verified
- Qualified Welding Procedures under our Program
- Aecon-Wachs meets all relevant nuclear industry standards
- Superior management and resources to ensure project success

# AECON-WACHS TRAINING FACILITY



Aecon Nuclear works closely with clients and suppliers to establish

safety programs and safe work execution training activities at our dedicated training facility in Aiken, SC and Cambridge, ON.



Geared to employees, subcontractors and suppliers, our facility provides computer-based training, mock-up rehearsals, and state-of-the-art simulation and human performance training. Experienced trainers focus on a behavior-based approach, with an emphasis on behaviors that produce the most positive results. Our trainers work to ensure all trainees fully understand these behaviors and provide ongoing support to all through consistent monitoring and evaluation to ensure these behaviors are retained.

**Safety and quality matter most!**

## THE AECON-WACHS ADVANTAGE PROCESS

At Aecon-Wachs, our vetting and training process is second to none. Our Advantage Process attracts talented professionals who choose to work for a performance-based company. Potential employees undertake rigorous aptitude tests that challenge their welding and machining skills before being sent to our clients. We also welcome customers who would like to use our state-of-the-art facility for training purposes.

**Aecon Nuclear: meeting today's demands and tomorrow's promise**

# NUCLEAR FIELD SERVICES



Spanning over three decades and more than 1000 nuclear energy projects, Aecon-Nuclear's portfolio of building, maintaining, and decommissioning nuclear power plants reflects a record of project success that ranges from modest maintenance contracts to major construction endeavors.

We support clients with our own in-house project management teams and trades in the field. Our team fully complies with Aecon Nuclear's most exacting standards to exceed our nuclear utility clients' high expectations of safety, reliability, quality and predictable performance.

## AECON-WACHS NUCLEAR PROJECT EXPERTISE

- Outage Craft Labor & Staffing Support
- Specialty Welding & Machining Services
- Pre and Post Weld Heat Treating
- Metrology, Lifting & Rigging, NDE
- Work Order Planning
- Managed Task Model for Component Replacement
- Condenser Retubing and Replacement
- Feedwater Heater and Pump House Refurbishment
- PWR and BWR Modifications
- Turbine and Generator Overhauls
- ISFSI Construction
- Valve and Rotating Equipment Refurbishments
- Intake Piping Removal and Installation
- EPC/Turnkey Projects
- Equipment Rentals
- New Build
- Plant Life Extensions
- Plant Modifications and Upgrades
- ASME Section III Installations
- Decommissioning
- Nuclear Waste Management

## OTHER VALUE-ADDED SERVICES

- Plant, System, Equipment Assessment
- Scope Definition, Third Party Owner Estimates
- Construction, Operation and Maintainability Review
- Material Traceability
- Strategic Procurement and Supply Chain Management
- Materials Management
- Field Engineering
- Risk Management and Mitigation Planning
- Resource Management and Training

## PROFESSIONAL STAFFING SERVICES

**AECON**

AECON INDUSTRIAL  
RESOURCING SOLUTIONS INC.

# QUALITY & QUALIFICATIONS

Nuclear power plants are sophisticated and complex industrial facilities. There is no room for compromising quality.



## AECON NUCLEAR QUALITY ASSURANCE PROGRAM

Aecon-Wachs Quality Assurance Program has been continually revised, refined and further developed to meet today’s most stringent industry standards. We leverage our decades-long experience in design, fabrication, welding and quality control to provide “Best Overall Value” to our clients.

## AECON NUCLEAR & AECON-WACHS QUALITY ASSURANCE MANUAL

Our Quality Assurance Manual conforms to:

- ASME Section III NCA-4000
- ASME NQA-1
- 10 CFR Part 50, Appendix B.
- ASME ‘S’ and ‘U’ Certificate of Authorization
- ASME Board ‘R’ Certificate of Authorization
- Quality Assurance Programs Support both Fabrication & Field Services

## QA AUDITS INCLUDE

- NUPIC members
- NIAC members
- U.S. Department of Energy

## THE N-STAMP

Aecon Nuclear’s Cambridge, ON location was awarded the highly coveted N-Stamp, the nuclear industry’s standard for quality assurance of materials, design, construction, operation, inspection and continuing maintenance of nuclear facilities.

Accredited by ASME, the N-Stamp is the nuclear industry’s confirmation that our manufacturing facility provides clients with the processes and procedures required to meet global nuclear fabrication requirements. Every single aspect of the manufacturing process is meticulously controlled and every step is completed in sequence according to a standard procedure and documented in intricate detail.



# NUCLEAR FABRICATION

With 170,000 square feet of ASME certified and 10CFR50, Appendix B fabrication facilities between Aiken, SC and Cambridge, ON, Aecon Nuclear is uniquely positioned to meet the demands of today's most complex nuclear assignments.

Our facility features customized equipment that ranges in size from large, fabricated modules to Class-1 components for all nuclear projects.

Operating this equipment is our highly-skilled, extensively-trained staff, who work with both fully



automatic and semi-automatic machines to ensure consistent, precise work. Aecon's in-house customized

computer software applications enable real-time tracking of each manufacturing project stage, direct from the manufacturing floor.

Our on-site post-weld heat treatment (PWHT) furnace and paint blasting/coating facility offers complete control over the quality of the final product, while enhancing our ability to deliver projects on time.



## CAPABILITIES

- Nuclear Class 1, 2, 3 Components
- Modularization and Fabrication
- Process Systems and Skids
- Structural Steel Fabrication
- Pipe Spool Fabrication (1/2" up to 90")
- Spare and Replacement Parts
- Off-site Equipment Overhauls and Refurbishments
- Tight Tolerance Fabrication
- Pre-and-Post-Weld Heat Treatment Facilities
- Pipe Bending & Water Jetting
- Paint and Blast Facilities
- RT Vault Facilities
- Prototyping
- Inspection and Testing

# SPECIALTY WELDING & MACHINING

Our goal is to provide the best specialty welding and machining services in the industry. We aim to exceed industry standards to bring our clients results that are second to none.

Our work ensures companies are more efficient with a reduction in project costs as a result of our project management expertise, as well as our knowledge in fabrication and installation, welding, and machining.

Our facilities include the latest technology and equipment to pre-fabricate systems and more efficiently confirm proof of concept. Our team works with metals of all types, from the newest and most exotic metals to standard metals used every day.

## OUR WORK IMPROVES THE LIFE CYCLE OF EVERY ASSET

As the industry and the materials we use evolve, we perform many tests to validate materials usage via manual and automatic processes. Our team is highly trained and constantly conducts research and development to stay ahead of all others in the industry.

## FIELD SERVICE SPECIALTY WELDING & MACHINING

- Orbital/manual welding:
  - GTAW–Gas tungsten arc welding
  - GMAW–Gas metal arc welding
  - FCAW–Flux cored arc welding
  - SMAW–Shielded metal arc welding
- Preheat utilizing induction heating
- Autogenous welding
- Mechanized plasma & oxy/acetylene cutting
- Pipe and large vessel segmentation up to 17 feet in diameter
- Precision beveling & compound weld prep
- Flange facing up to 120 inches in diameter
- O-ring groove machining
- Precision boring bar operation
- Stud removal
- Technical support
- Special applications engineering



# ELECTRICAL AND I&C PLANT SERVICES

Aecon-Wachs offers Union & Non-Union craft, with Aecon-Wachs Supervision, to perform a range of Electrical and I&C services.

## Our Experience Shows

Aecon-Wachs, in collaboration with our Electrical Division, AIML, provides qualified technicians for Electrical and I&C services during outage and on-line maintenance. Whether it is an Aecon-Wachs-led Major Project or you need a dozen resources to support an outage, our trained and qualified I&C-E technicians meet ISA standards.

The Aecon-Wachs process is extensive and includes pre-planning and complete project evaluation, as well as comprehensive management reviews. In addition, risk assessments and contingency plans ensure successful completion of projects – on schedule and on budget.

We train and qualify our technicians through a rigorous, performance-based technical training and qualification program that meets EPRI standards. Our technicians can work independently under Aecon-Wachs supervision or under Utility supervision, which provides client flexibility on projects, provides adequate resources, and ensures cost containment.



## CAPABILITIES

- Backlog Reduction
- Online & Outage/Turnaround Maintenance
- Preventive & Corrective Maintenance
- Equipment Installation, Modification & Testing
- Troubleshooting
- Training Services



# FABRICATION

With Aecon Nuclear’s qualifications, experience, and state-of-the-art technology, we can fabricate virtually any material or combination of materials, including specialty alloys and very high strength steels.

PIPE SIZES RANGING FROM 0.5" – 90" IN DIAMETER

The Aecon-Wachs Nuclear team has fabricated steel components for everything from ASME III pipe/mechanical modules, steam generator piping systems, specialized tooling, and structural components, to shielding canopies and nuclear island containment bulkheads.

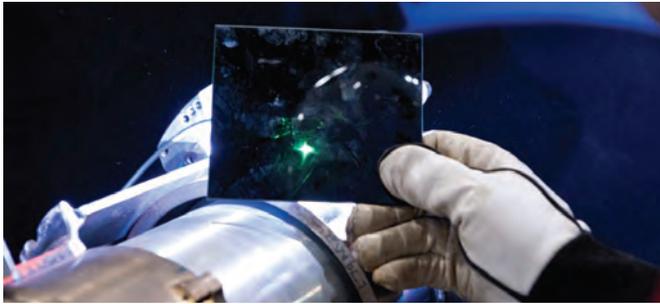
**As an N-Stamp specialty fabricator,** Aecon Nuclear complies with stringent ASME Section III and NRC regulations. Other Aecon Nuclear fabrication advantages include:

- Specialized nuclear component training and qualification of welders
- Highly optimized welding procedures that deliver exceptional quality and productivity
- Utilization of state-of-the-art welding technologies, including:
  - Semi-mechanized hot wire TIG
  - Automated orbital TIG
  - Induction heating
- In-house pipe-bending capabilities
- Custom software to enable real-time tracking and reporting throughout every stage of the process
- Extensive use of touch screen tablets and RF scanners to improve field data capture

**Aecon Nuclear’s fabrication and modularization services** feature strict Nuclear Grade, Commercial-Grade Dedicated material management processes. Aecon’s robust material management processes include:

- Receiving & receiving inspection
  - Documentation review
  - Physical inspection
- Material control
  - Automatic material tracking
  - Location control
- Reporting
  - Job/weld status
  - Customized client dashboards
- Institutionalizing complete documentation history





## INNOVATION

At Aecon-Wachs Nuclear, we know that to be competitive in the future, we need to be innovative today.

Wherever possible, we adopt an innovative lens to every aspect of our work to ensure we're offering our clients the safest, best-in-class service in the industry.

### TRACK RECORD OF INNOVATION

- Development of advanced automatic and semi-automatic welding procedures
- Use of Orbital TIG Welding Systems that allow the welding operator to use a monitor and hand-held controller to control a robotic welding head on a track around the pipe
- Structural and Pressure Boundary Submerged Arc Welding (SAW)
- Semi-mechanized hot wire TIG



- Dimensional inspection of fabricated modules using 3D models uploaded to a laser tracking device, designed to ensure field termination points are in accordance with client coordinate requirements
- Use of 3D printers to prototype modules for final assembly mock-ups
- Implementation of induction heating for the digital control of pre-heat and post-heat of welded components



# ***AECON - WACHS***

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