



APTIM

# DECOMMISSIONING AND DEMOLITION PROFESSIONAL SERVICES FOR THE POWER INDUSTRY

Statement of Qualifications

# D&D SERVICES

At APTIM, we understand the decisions to address power plant closures are complex, difficult and strategic to our Clients' business plan. We focus on our Clients' needs by forming a partnership that results in a safe, environmentally compliant, and value-added outcome to maximize asset value and mitigate our Clients' risk to the greatest extent practical.

APTIM's D&D services range from pre-D&D project planning and assessment through site restoration and reuse. A highly trained and experienced technical and field staff, regulatory expertise and strong industry relationships, in addition to our proven performance record, demonstrates our ability to complete any D&D project. Safety performance and environmental compliance remain core values of project planning and performance.

We define decommissioning as the efforts to get the facility to a "Cold, Dark and Stable" state. This includes the initial draining of fluids, collections of all free product waste streams throughout the facility, asbestos containing material (ACM) abatement, ensuring major mechanical systems are free of stored energy and the initial de-energization of electrical equipment and systems. Demolition is the physical removal and dismantlement of equipment, systems and structures from the facilities.

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## Company Overview

Having operated under predecessor companies with distinguished histories, APTIM is a leading provider of integrated D&D engineering design, construction, and operations within a variety of industries. We provide our services through all project phases, based on our comprehensive capabilities in up-front engineering and design, construction (including Engineering, Procurement and Construction (EPC) and traditional approaches), operations and

maintenance, program management, remediation, emergency action, and recovery services. A steadfast commitment to our clients, safety and operational excellence differentiates us within the industries we serve.

Our D&D specialists have extensive experience and a nationwide presence, which allows us to take on power plant closing projects ranging from the routine to the most challenging.

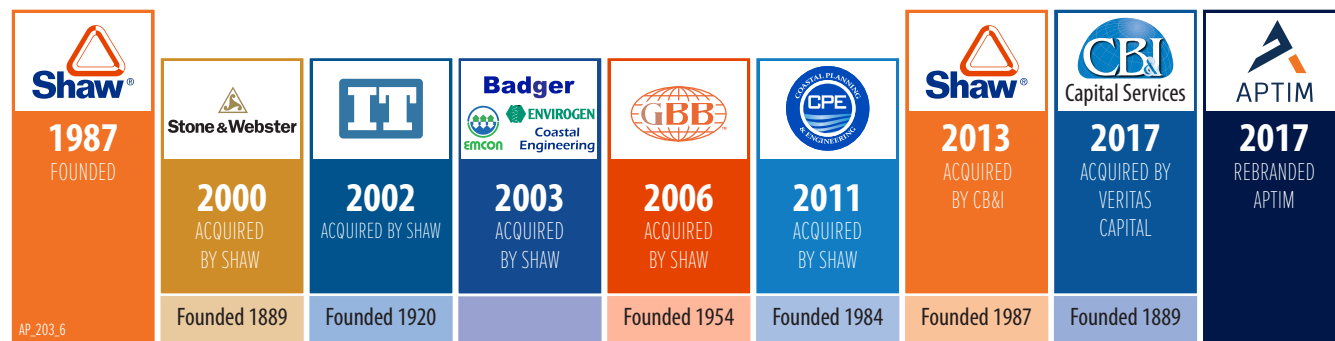


Exhibit 1: APTIM's evolution

### D&D Services

Our working knowledge of D&D project facets serve as the foundation of our services to achieve both client and regulatory objectives. The APTIM D&D team is experienced with managing the entire lifecycle of projects from initial planning and assessments through remediation and site closure. We provide the following services to our D&D Clients: program management, project management, planning, evaluations and assessments, environmental compliance, waste management, asset and equipment resale/recycle management, engineering, construction management, and quality management.

Our goal is to provide Clients with an optimized value solution – the option that generates the highest revenue at the lowest cost.

### A Commitment to Safety – Always

Safety is a core value at APTIM. Our efforts center on the fundamental belief that all accidents are preventable. This principle drives our ultimate safety goal: zero incidents. A proactive approach to safety benefits Clients by limiting lost workdays and lost productivity, decreasing insurance costs, and safeguarding our most important asset – our employees. We combine our health and safety policies and procedures with client health and safety programs to create site-specific safety and health plans for hundreds of projects each year. Our excellent safety record proves our success in creating a safety-focused culture – we partner with our employees to be proactive in safeguarding their own safety and those who work around them because of the shared belief that all accidents are preventable.

## Program Management

APTIM's Program Management services span the entire lifecycle of plant retirement. As the owner's engineer, APTIM oversees each phase of D&D to accomplish the Client's objectives and ultimately to achieve the Client's future use goals for the site. APTIM's approach to D&D is divided into five phases:

- Phase 1 – Business planning
- Phase 2 – Pre-shutdown planning
- Phase 3 – Post shutdown execution
- Phase 4 – Abatement and demolition
- Phase 5 – Site restoration and project close-out



APTIM's Program Management services are focused on risk management backed by our time-tested and proven procedures and methodologies to deliver the project to a safe and successful completion. APTIM manages the Owner's risk by establishing a safety culture, avoiding cost overruns, planning to avoid unforeseen occurrences, assigning qualified and experience project professionals to the project team, commodity market monitoring and maintaining a strong salvage market network. Our proven project delivery methodologies, combined with our industry knowledge-base of construction and demolition practices acquired through years of project oversight, assures that value identified during project planning will be realized during project execution.

## Project Management

APTIM's Project Management approach ensures that consistent work practices and management procedures are applied regardless of task variability. APTIM follows established management procedures based on the Project Management Institute Project Management Body of Knowledge (PMBOK) and Construction Management Association of America (CMAA) Construction Management Standards of Practice. Project management teams are also responsible for ensuring safety, ISO9001 compliant quality systems, proactive risk management and mitigation planning, resource management and forecasts (i.e., manpower, equipment, and materials).

Project teams are equipped with management information systems (MIS) to provide tools for tracking and reporting real-time data from remote locations to a centralized relational database. APTIM's MIS is a dynamic, technology-driven system that fully integrates program cost and schedule management; contract management; and technical and regulatory management for effective project administration. The applications used in APTIM's MIS are: Primavera P6, Expedition and Contract Manager, InSite®, MS-Project, PROCORE®, and Timberline Precision Estimating® (Timberline®). Based on client server and web technology, this integrated and

**APTIM has extensive experience in all phases of facility planning, engineering, design, permitting, and construction.**

adaptable system has applications that allow for management of turnkey planning, execution, and closeout of projects. Reports generated from the MIS are used by program and project managers as well as other staff (e.g. cost schedulers, procurement, project accounting, and administration personnel) to manage and control a project. These tools, combined with a well-organized project portal and communication systems, enable the owner, our staff and subcontractors to work seamlessly from multiple locations.

## Pre D&D Execution Planning

APTIM understands that the planning and preparation for performing demolition work is as important as physically completing the work. Pre-work planning and estimating sets the foundation for successful completion of a D&D project. At times this planning can take place years before D&D is even contemplated as part of the Client's overall plant assessment. Our planning approach considers the Client's corporate business directives, economics, community perceptions, regulatory drivers, liabilities and risk.

Our project planning services cover scope development support, which includes preparation of work plans that detail and communicate the activities associated with all project phases, as well as development of reserve planning estimates.

Examples of the work plans APTIM develops at this stage of D&D include but are not limited to:

- ▶ Transportation
- ▶ Demolition
- ▶ Restoration
- ▶ Property transfer options

- ▶ A communication plan
- ▶ Preparation of project specific procedures and specifications
- ▶ Waste management plan
- ▶ Development of on-site and off-site traffic plans
- ▶ Regulatory permit applications and acquisitions
- ▶ Site surveys
- ▶ Assessments
- ▶ Evaluations

The work plans include performance-based decommissioning standards that establish the project basis for decommissioning plant specific systems. These standards are concise (one to three pages), system-specific, risk-based, and include regulatory or best practice procedures.

A full range of estimates can be developed on both the cost side (decommissioning, environmental abatement/remediation, de-energize, demolition) and revenue side (equipment liquidation, salvage), as well as cost-benefit analyses of partial versus full closure and Initial risk-based cost estimates for rate base justification. These estimates also include a preliminary equipment inventory and initial salvage valuation. Ferrous and non-ferrous metal salvage, and sale-able equipment estimates include quantities and projected value of structural steel, non-sale-able equipment, and high value salvage items (copper, condenser tubes, specialty metals - i.e. turbine blades, etc., remaining ferrous and non-ferrous metals, and masonry materials).

## Evaluations and Assessments

Prior to plant shutdown APTIM conducts evaluations and assessments in order to aid owners and the project team in the development of comprehensive risk and



profitability-based solutions, as well as to provide information to develop detailed scopes of work for D&D of the facilities. These findings support the development of a roadmap to bring the facility to a Cold, Dark, and Stable state prior to the start of D&D.

Engineering assessments are performed to document the on-site systems and connectivity so that separation and/or disconnection of non-essential services can be performed while maintaining functionality of essential services needed during D&D. The engineering assessments is key to navigate the entire D&D process to ensure services remain intact to support D&D work, and future use of the plant site if necessary. Essential services needed during D&D may include support buildings, switchyards, wells, sewage systems, and wastewater treatment plants. For mechanical systems, the assessment includes identification of how major support systems such as fire protection, potable and service water, compressed air, wastewater and sewer systems will be needed during the initial shutdown of the facility as well as if they will be required after the project is complete. For electrical, controls and communication systems, we identify how things are energized, the switchgear and load centers necessary to keep essential services operational, as well as the routing of cable from the load center to the equipment.





Environmental assessments are performed to identify above and below grade areas that may require remediation and/or restoration. Areas of potential concern included in an environmental assessment are: universal, hazardous, non-hazardous and special waste; ACM; acid and caustic chemicals; lightbulbs; refrigerant in the chillers and heating ventilation and air conditioning (HVAC) system; coal combustion residuals (CCR); hydrocarbons or chemicals, underground storage tanks (USTs) or vaults; and fuel transfer piping. This assessment is a major resource used for developing the environmental compliance plan for the project. We also use the volumes, quantities and details identified during the assessment to develop a cost estimate for the proper removal, possible decontamination, and disposal of the identified materials. A tool developed from the findings of this assessment is a single, shareable database accessible by the plant for future use, particularly during property development or re-purposing.

Of particular interest in older plants during D&D are ACM. ACM are one of the leading cost drivers and usually makes the difference between a cash neutral or revenue generating project. ACM abatement is also a risky phase of the project with regards to regulatory oversight and safety. APTIM has the experience and capabilities to manage this risk for our clients. We have the expertise to review testing results and evaluate completeness, recommend additional testing if needed, perform that testing, assist with permitting and regulatory approvals, prepare specifications, help select a quality abatement contractor and manage that contractor throughout abatement.

## Environmental Compliance

Compliance program support across an array of environmental, health and safety (EH&S) regulatory requirements is an important part of any decommissioning project. We assist our Clients in organizing and implementing programs at the facility level to meet EH&S monitoring, recordkeeping, reporting, and training requirements. APTIM can prepare documents to support the following environmental aspects during D&D:

- ▶ Decontamination methods and procedures
- ▶ Establishment of environmental, health and safety project controls
- ▶ Fugitive emissions and dust control
- ▶ Stormwater management
- ▶ Erosion and sediment controls
- ▶ Noise mitigation
- ▶ Site restoration/redevelopment design
- ▶ Regulatory filing support

- ▶ Licensing and documentation support for decommissioning
- ▶ Remediation Plan
- ▶ Spill prevention, control and countermeasure (SPCC) Plans

Our personnel also have extensive experience identifying and integrating multi-agency compliance requirements and providing strategic compliance planning recommendations. APTIM provides services for the development and execution of a comprehensive regulatory strategy that manages interaction with all agencies as the project is planned and executed based on client preferences. This program identifies permits associated with operations of generating units planned for retirement, as well as shared systems that may be impacted by the closure of these units. This includes, but may not be limited to: air permits, wastewater discharge permits, industrial and construction stormwater discharge permits, wetland permitting, potable and service water systems compliance, SPCC compliance, waste management compliance, hazardous materials inventory and reporting compliance, cultural and natural resource compliance, and wildlife protections. Additionally, permits and closure requirements that may exist with local regulatory agencies, such as the fire or health department, will be identified.

## Waste Management

We work closely with the Client to identify acceptable and owner-approved waste disposal facilities that minimizes third-party liability concerns associated with waste disposal. Once a disposal facility is selected, APTIM can coordinate all waste load-out, transportation and disposal activities, as well as proper documentation that may include manifests, bills of lading, recycle certifications, etc. This information is conveniently organized and maintained within APTIM's MIS for efficient reference and/or resurrection of the waste documentation/data.

APTIM uses regulatory-approved sampling and analytical methods to ensure waste characterization data is obtained accurately and reflects waste materials generated as a result of plant retirement. APTIM provides services for the characterization and profiling of all waste materials generated prior to and during facility demolition. These characterizations can be used for waste profiling and disposal facility acceptance purposes.



## Asset and Equipment Salvage

Equipment liquidation is an important component of plant retirement. This activity has the potential to generate project revenue in addition to closely determining the anticipated credit associated with high value and steel salvage under current commodity market conditions. APTIM provides services to coordinate, document and oversee all equipment liquidation and scrap salvage operations while maintaining detailed records of items sold or quantities of materials moved off-site for salvage recycle.

Our APTIM team can conduct a site survey to inventory, classify, organize, catalog, tag, and digitally photograph every asset. Additionally, through our network of reputable equipment liquidators, we can coordinate an international marketing and sales campaign designed to target the appropriate industry trade groups that routinely purchase these items. Prior to

plant demolition, APTIM can coordinate site visits from prospective buyers and conduct webcast auctions for international and local bidders.

APTIM works with the Owner to develop acceptable “as is/where is” purchase agreements. APTIM’s team also supports with the identification, pre-qualification, selection and coordination of equipment rigging companies to be employed for equipment removal. APTIM manages the compilation of all appropriate documentation of each sale while working with the buyer to coordinate transfer of assets including scheduling, match marking, rigging and asset extraction, and crating. For projects that the owner and contractor share the risk /reward associated with salvage and scrap APTIM can manage the process to make sure the contractor is honoring their commitment to the owner.



## Engineering

APTIM offers comprehensive engineering and design services ranging from conceptual design through fully integrated licensed operations. Our in-house engineering department has experienced professionals whose primary focus is to ensure that the business goals of our customers are met in a safe, timely and cost-efficient manner. To reduce costs and shorten schedules for the engineering and design efforts, APTIM has developed standard procedures, drawings, details, and specifications in all disciplines. Our specification databank ranges from operational specifications such as system modifications, electrical and mechanical to specifications needed to execute D&D such as structural and civil. The preparation of bid specifications and drawing packages using available information from the plant specification and drawing database provides our clients a foundation for maximizing potential revenue while reducing costs for decommissioning, demolition and asset liquidation.

Our team of structural, mechanical, electrical, plant and civil engineers and technical specialists are engaged throughout the life cycle of the D&D project. This team is involved in performing engineering and coordination for structural surveys, safety engineering, mechanical separation and/or isolation from the grid, de-energization, development of specification and drawing packages for demolition contractor procurement, engineering cost estimates, final survey and review or approval of final as-built drawings. We also provide services for dismantling and removing equipment and systems; these services can include rigging, handling, and shipping preparation of large components.



## Construction Support

Management of the construction process requires comprehensive capability, an outstanding team, and proven management that are focused and tuned-in to the needs of the Client. Our focus is to manage all aspects of the demolition, asset management, and remedial environmental construction work to ensure project execution meets specifications, design and client requirements. Construction services we can provide are:

- ▶ Subcontractor selection and management
- ▶ Quality management
- ▶ Construction sequence scheduling
- ▶ Monitoring of construction programs and processes
- ▶ General field inspections for contract compliance
- ▶ Daily monitoring of contractor field operations
- ▶ Project performance tracking
- ▶ Address all contractor requests for information (RFIs)
- ▶ Assure work is proceeding safely, per specification requirements and the contract
- ▶ Procurement support through preparation of project specifications and bid evaluations
- ▶ Monitor and address any impacts to the surrounding community
- ▶ Assure work is completed in accordance to all applicable federal, state and local regulations
- ▶ Review and approve contractor invoices assuring contractor is only paid for work completed, including any salvage/scrap arrangements
- ▶ Ensure contractor has completed all work to the satisfaction of the owner prior to final release of retainage
- ▶ Run daily, weekly and monthly meetings
- ▶ Manage all data and communicate all issues to the Team

APTIM’s approach to supporting construction provides transparency to our client while maximizing cost savings through competitive bidding of major project cost items. Subcontracted services can include items such as ACM abatement, industrial cleaning activities, equipment marketing/sale/rigging, facility demolition, and material salvage activities. A site-specific subcontracting plan is created with the focus of identifying local small or disadvantaged business enterprises for work packages fitting their specific skill set. APTIM’s capabilities and global reach ensure access to “best in class” contractors, vendors and suppliers. APTIM utilizes pre-qualified contractors, selected through a competitive bid process transparent to an owner, to provide services such as industrial cleaning, hazardous materials disposal, or facility demolition. APTIM manages all internal and external resources providing expert project management, health and safety oversight, construction management and project direction through project completion and closeout.

## Quality Management

APTIM has institutionalized quality with our Quality Management System (QMS). At the project level, quality assurance/quality control (QA/QC) oversight responsibility rests with the project staff or with independent personnel, or both, depending on the complexity of the project and the requirements of the client. APTIM’s overall approach to quality is to thoroughly assess and understand client requirements and needs, and to subsequently plan and perform work in a manner that meets those needs. We use periodic assessment and continual improvement techniques to enhance the effectiveness and efficiency of our systems and processes. The QMS provides a framework for a consistent approach throughout APTIM while allowing the flexibility necessary to address specific client needs and requirements.



APTIM Mitigates the Risk by:



POTENTIAL RISKS	APTIM MITIGATION STRATEGIES					
	ESTABLISHED SAFETY CULTURE	PROGRAM MANAGEMENT SERVICES	QUALIFIED PROFESSIONAL RESOURCES IN POWER PLANT D&D	EXTENSIVE EXPERIENCE IN SALVAGE MARKET CONDITIONS, MAXIMIZE ASSET VALUE	ACCESS TO MULTIPLE DEMOLITION CONTRACTORS	ACCESS TO PROPERTY DEVELOPERS
Multi-year D&D Schedule	♦	♦	♦	♦	♦	♦
Budget vs Actual Costs	♦	♦	♦	♦	♦	♦
Regulatory Risk	♦	♦	♦	♦	♦	♦
Safety Liability	♦	♦	♦		♦	
Loss of Institutional Knowledge	♦	♦	♦			♦
Environmental Compliance	♦	♦	♦		♦	
Variabilities in Commodities Market		♦	♦	♦	♦	♦
Future Value of Property		♦	♦	♦		♦
Community Relations	♦	♦	♦	♦	♦	♦





# PROJECT EXPERIENCE

APTIM is a leader in integrated D&D professional services within a variety of industries. The following select project references demonstrate our D&D capabilities and experience at fossil fuel generating facilities. Please do not hesitate to contact us should you wish to discuss your needs.

The table below lists selected D&D projects our team has either recently completed or is currently working on. Project summaries are provided in Section 2.0.

**Projects**

	Document Condition of Site after Decommissioning	Produce Storm Water Management Plan	Produce Permitting Plan	Develop Regulated Materials Management Plan	Develop Site Remediation Plan	Produce Demolition Sequence & Site De-energization Plan	Perform Calculations & Prepare Report of Estimates of Usable Rubble & Fill	Produce Level 2 Schedule of Demolition Activities	Create Estimate for Demolition Cost without Salvage Value	Create Estimate for Salvaged Equipment & Materials Value	Create Estimate for Final Site Restoration	Provide Specifications & Bidding Documents for Demolition Contractors	Provide Input & Assist Owner in Selection of Demolition Contractor	Provide Specifications & Bidding Documents for Remediation Contractors	Provide Input & Assist Owner in Selection of Remediation Contractor	Respond to RFIs During Bidding Process	Provide Guidance & Assist Owner for Finalization of Permits
JEA, Jacksonville, FL – St. John River Power Plant Decommissioning,	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Arizona Public Service, Fruitland, NM – Four Corners Power Plant Decommissioning & Demolition Planning, Engineering, & Project Management	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Arizona Public Service, Fruitland, NM – Four Corners Power Plant Decommissioning Study Units 4 & 5							♦		♦	♦	♦						
Arizona Public Service Company/PacificCorp, Joseph City, AZ – Cholla Decommissioning Study Units 1, 2, 3 and 4	♦			♦	♦	♦	♦	♦	♦	♦	♦						♦
NV Energy, Moapa, NV – Reid Gardner Generating Station Units 1, 2, 3 & 4 Decommissioning & Demolition Engineering	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Santee Cooper, Moncks Corner and Conway, SC – Jefferies & Grainger Generating Stations Decommissioning, Decontamination, & Demolition	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Potomac Electric Power Company Energy Services, Washington DC - Decommissioning Services, Washington	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Pacific, Gas & Electric Company, Eureka, CA – Humboldt Bay Power Plant Decommissioning	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
GE Financial, Trona, CA – ACE Cogeneration Facility Asset Valuation Assessment	♦		♦	♦		♦		♦	♦	♦	♦						
PacifiCorp, Ogden, UT – Little Mountain Generating Station Decommissioning Project	♦		♦			♦		♦	♦	♦	♦		♦			♦	♦
PacifiCorp, WY and UT – Multi-Site Decommissioning Study	♦		♦			♦		♦	♦	♦	♦		♦			♦	♦
Empire District Electric Company, Riverton, KS – Riverton Power Station Decommissioning Study	♦	♦	♦		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦		
Exelon, Pennsylvania - Eddystone Generating Station Units 1 & 2	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Exelon, Dallas, TX – Mountain Creek Generating Station Dismantlement/Demolition Scope & Cost Estimating Support							♦		♦	♦	♦						
DRV, Pisgah Forest, NC – Ecusta Paper Mill Demolition, Remedial Design and Removal Action	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦					♦	♦
Northwestern Energy, Butte, MT – Power House Demolition	♦			♦													
New Jersey School District, Trenton, New Jersey – Trenton Central High School Consulting Services	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Shop Rite, Carmel, NY – Asbestos Abatement Oversight and Air Monitoring Floor Tile Mastic Removal	♦			♦	♦						♦				♦		♦



The table below lists additional APTIM D&D projects.

**Additional Experience**

	Document Condition of Site at after Decommissioning	Produce Storm Water Management Plan	Produce Permitting Plan	Develop Regulated Materials Management Plan	Develop Site Remediation Plan	Produce Demolition Sequence & Site De-energization Plan	Perform Calculations & Prepare Report of Estimates of Usable Rubble & Fill	Produce Level 2 Schedule of Demolition Activities	Create Estimate for Demolition Cost without Salvage Value	Create Estimate for Salvaged Equipment & Materials Value	Create Estimate for Final Site Restoration	Provide Specifications & Bidding Documents for Demolition Contractors	Provide Input & Assist Owner in Selection of Demolition Contractor	Provide Specifications & Bidding Documents for Remediation Contractors	Provide Input & Assist Owner in Selection of Remediation Contractor	Respond to RFIs During Bidding Process	Provide Guidance & Assist Owner for Finalization of Permits
US Army Corps of Engineers, Washington DC – Washington DC Schools Asbestos Assessments, Abatement and Construction Oversight Support	◆	◆	◆	◆	◆	◆		◆	◆		◆	◆		◆	◆	◆	◆
USPS, Hamilton, NJ Post Office, Brentwood Post Office Washington DC and Capital Hill Anthrax Contamination cleanup , Washington, DC – Asbestos and Lead Paint Surveys, Operations and Maintenance Plans, and Anthrax Investigations and Remediation	◆	◆	◆	◆	◆			◆	◆	◆	◆			◆	◆	◆	◆
PEPCO Energy Services, Washington DC – Benning Road and Buzzard Point Generating Stations Decommissioning Services	◆			◆	◆	◆	◆	◆	◆	◆	◆				◆		◆
DTE Energy, Detroit, MI – Connors Creed Decommissioning Services	◆			◆	◆	◆	◆	◆	◆	◆					◆		◆
Praxair Distribution, Inc. – 2019 D&D Site Activities	◆										◆				◆		
Exelon, Boston, MA – New Boston Generating Station Asbestos Survey	◆		◆	◆							◆						
Air Products and Chemicals, Inc, Nationwide and Puerto Rico – Asbestos Surveys	◆		◆	◆													
Pinchin Environmental, Ltd, Nationwide – Asbestos Surveys nationwide and St. Lawrence Cement	◆		◆	◆										◆			◆
AT&T, Various Locations in California – Compactor Waste Assessments, Universal Waste Disposal/Segregation and Regulated Waste Audits	◆		◆	◆													
Confidential Client, California – Compactor Waste Audits	◆		◆	◆													◆
Lowe's, Various Locations in California – Compactor Waste Assessments and Waste Audits	◆		◆	◆													◆
Petco, Various Locations in California – Environmental Compliance Assessments, Compliance Improvement Plans and Compliance Consulting and Support	◆		◆	◆													◆
Target, Various California Locations – Compactor Waste Audits and Assessments	◆		◆	◆													◆
Tractor Supply, Various Locations in California – Solid Waste Audits, In-store Inspections and Water Sample Collection	◆		◆	◆													◆
Walmart, Various California Locations – Compliance Consulting and Support, Hazardous Material Business Plans	◆		◆	◆													◆
Whole Foods, Various Locations – Refrigeration Audit Program	◆		◆	◆													◆
US EPA Region 3, Walpole, MA – TMC Sites Asbestos Removal	◆		◆	◆													◆
Confidential Client, USA – Asset Valuation Project	◆			◆													◆



## JEA, JACKSONVILLE, FLORIDA – ST. JOHN'S RIVER POWER PLANT DECOMMISSIONING

The St. John River Power Plant (SJRPP) is a large coal-fired electric generating plant featuring two turbine/generators that can each supply 632 MW to the transmission grid. JEA and Florida Power and Light jointly own this facility. The plant is located on a 1,600-acre site in the northeast section of Jacksonville, Florida. Coal to fuel the plant is supplied primarily from overseas utilizing a ship unloading facility owned and operated by the plant on nearby Blount Island. When operating at maximum capacity the plant consumes approximately 4.5 million tons of coal per year. When the plant was constructed in the early 1980s. It represented the largest

construction project in Jacksonville's history. Unit 1 began commercial production on March 27, 1987. Unit 2 was completed a year later and began its operation on May 27, 1988.

The joint owners decided to decommission and raze the plant with plans to maintain the property for future development or to replace the plant with a natural gas unit. APTIM was contracted to represent JEA in the preparation, procurement and execution of the decommissioning and demolition of the plant, the cooling towers, all underground appurtenances and the closure of the coal pile and coal conveyance system from the plant to the Blount Island receiving terminal.

The project was divided into five phases. Phase 1 – Business Planning, Phase 2 – Pre-Shutdown Engineering & Planning, Phase 3 – Post Shutdown Decommissioning Execution – Phase 4 – Demolition and Phase 5 – Site Remediation and Final Grading; with the decommissioning approach to have the property ready for resale. APTIM led the effort in overseeing Phase 2-5, which includes all aspects of engineering related to the development of demolition specifications, storm water planning and management, permit requirements, system modification engineering & construction and selection of the demolition contractor. Major planning for environmental considerations were required since the coal conveyance system was built across the St. John's River and sensitive wetlands. Interface with Florida Department of Environmental Protection (FDEP) representatives was a crucial aspect of the decommissioning of the plant. During Phase 3, APTIM self-performed the removal of universal and hazardous waste throughout the facility to ensure all areas were prepared for turning over the facility to the demolition contractor. APTIM cleansed the plant and developed all scopes related to demolition by the successful contractor. These activities involved: providing the required air gaps of electrical cables; cutting and capping pipe; removal of regulated waste; and removal, flushing and cleaning of chemicals, ash, gypsum and coal dust.

During Phase 4, the demolition was sequenced to include the removal of ancillary structures, an anhydrous ammonia facility, surrounding support buildings, underground pipe chases, pipe racks, lime storage system, and precipitators followed by the dismantlement of the power block and associated structures. Sequencing the dismantlement in this

manner ensured adequate room for buffer zones, lay-down areas, alternate traffic patterns and implementation of other protective measures before dismantlement of the main power block. It also provided adequate room for the cleaning and dismantlement of all the associated ponds and holding cells such as the coal pile, conveyance systems, ash handling system and lime slaking system.

The plant was demolished to grade. Aboveground concrete structures were removed down to three feet below grade and this material was reused as structural backfill. Clean import material was used to backfill the coal and lime unloading tunnel, coal emergency reclaim tunnel, lime reclaim tunnel, and hot well pits within the power blocks.

CLIENT  
JEA

### PROJECT HIGHLIGHTS

- ▶ Plant Size: 1,264 MW
- ▶ Full cycle D&D professional services and program management from initial assessments to demolition and dismantlement oversight
  - › Specification development
  - › Demolition contractor selection support
  - › Planning
  - › Environmental assessments
  - › Regulatory support



## ARIZONA PUBLIC SERVICE, FRUITLAND, NEW MEXICO – FOUR CORNERS POWER PLANT D&D PLANNING, ENGINEERING, & PROJECT MANAGEMENT

Four Corners Power Plant is one of the largest coal-fired generating stations in the United States. The Plant is located on the Navajo reservation in Fruitland, New Mexico, about 25 miles west of Farmington, New Mexico. It was the first mine-mouth generation station to take advantage of the large deposits of sub-bituminous coal in the Four Corners region. The plant's five units generate approximately 2,185 gross megawatts. Units 1, 2, and 3 went commercial in 1963 followed by Units 4 and 5 in the early 1970s. Units 1 and 2 are Babcock and Wilcox boilers with generation rated at 170 megawatts net. Unit 3 is a Foster Wheeler boiler with generation rated at 220 megawatts net. Units 4 and 5 are both Babcock and Wilcox boilers with generation rated at 755 MW net. A portion of this facility was decommissioned using Arizona Public Service (APS) plant personnel.



APTIM was contracted to represent APS in the preparation, procurement and execution of the decommissioning and demolition of the Four Corners Plant. APTIM developed the initial project schedule, planning budget, and performed a complete schedule/cost/scope review with APS. APTIM further developed capital and O&M budgets, the overall project charter, and the stakeholder register. Preproject plans developed included:

In preparation for D&D scopes of work, APTIM prepared safety, environmental, financial, schedule, and project communication plans;

system specific decommissioning standards; ACM survey report; and universal waste characterization report. At the same time, APTIM placed full time planners on site to work within APS's network to develop work orders and job plans for the decommissioning. The work order totals over 800 documents detailing specific tasks to accomplish while removing high value assets for capital recovery, and over 2,000 specific job plans including diagrams and drawings as needed.

Utilizing as-built drawings, APTIM provided detailed review of Units 1, 2, and 3 to identify major project components and relationships to overall plant operating logistics (existing utilities – storm drains, water mains, sanitary sewer lines, natural gas lines, etc.) Preliminary review of design drawings and information gathered from site audits indicated numerous systems needed further investigation regarding their relationship to the remaining operating units.

APTIM conducted the original study and updated the study to reflect several scenarios. During the study, we deemed ten systems critical, which required a redesign and collection of over 10,000 asbestos and lead based paint samples.

APTIM performed planning, which entailed creating over 3,000 individual job plans and Lock Out/Tag Outs

(LOTO) so APS personnel could self-perform decommissioning tasks. The result of the decommissioning efforts resulted in no lost time incidents for over 250,000 labor- hours (APS and APTIM).

APS utilized local resources to perform decommissioning tasks. Tasks included but not limited to removal of boiler feed pumps, rerouting auxiliary water line, removal of water lances, pumps, motors, instrumentation, etc. To support the use of local resources, APTIM performed a training analysis matrix to identify areas that required additional training to allow the transition of APS personnel to a variety of tasks. The outcome of this analysis was the incorporation of safety steps, job walks, LOTO and systematic instructions to perform for each task included within the work orders and job plans.

Once demolition was initiated, APTIM served as the project and construction managers for the entire project. APTIM had full authority from APS to oversee demolition and reclamation. APTIM was responsible for schedule, safety, and costs.

### Accomplishments

- ▶ Project completed ahead of schedule by 2 months.
- ▶ Delivered project under budget by \$2M.
- ▶ Implemented aggressive material recycle and re-use program to maximize materials' value and reduce costs.
- ▶ Implemented innovative staffing solution involving past and present plant personnel.
- ▶ No lost time incidents for over 250,000 labor-hours.

### CLIENT

**Arizona Public Service Company**

### PROJECT HIGHLIGHTS

- ▶ Plant Size: 2,185 MW
- ▶ Initial project schedule and planning budget
- ▶ Capitol and O&M budget development
- ▶ Compliance plans
- ▶ Developed decommissioning standards
- ▶ Asbestos survey
- ▶ Universal waste
- ▶ Asset recovery
- ▶ No lost time 250,000 labor hours



## ARIZONA PUBLIC SERVICE COMPANY/PACIFICORP, JOSEPH CITY, ARIZONA – CHOLLA UNITS 1, 2, 3 AND 4 DECOMMISSIONING STUDY

The Cholla Power Plant is composed of four units with a total net generating capacity of 1,027 MW. Unit 1 was constructed in 1961 and is a 114 MW unit that was commissioned into service the following year. The much larger Units 2, 3 and 4 were constructed between 1978 and 1980. Unit 2 is a 289 MW Unit commissioned in 1978 and Unit 3 (312 MW) and Unit 4 (414 MW) were both commissioned for service in 1980 and 1981 respectively. Units 1, 2, and 3 are owned by APS and PacifiCorp owns Unit 4, the largest unit. The power plant is located on the Little Colorado River.



**The Cholla facility is a coal-fired power plant located in northeastern Arizona**

APTIM completed a detailed ACM survey to include the collection of ACM bulk samples throughout Cholla Unit 1, 2, 3 and 4 and the associated common structures to provide a summary sufficient for bidding. The ACM survey was performed by a certified Asbestos Hazard Emergency Response Act (AHERA) Asbestos Building Inspector with significant working knowledge of coal-fired power plants.

APTIM also completed a quantification of universal waste/hazardous materials throughout all Cholla Units to include but not limited to mercury, PCBs, refrigerants, hydrocarbons, light fixtures and batteries. The universal waste inventory did not include environmental sampling. Cost estimates for packaging, residual waste cleanup, transportation and disposal/recycling were provided with the Universal Waste Inventory.

APTIM developed a conceptual execution plan covering decommissioning, D&D project activities to develop a detailed cost estimate, which was used by APS for future budget and forecasting purposes. This execution plan addressed complete demolition to grade. The engineering cost estimate included critical project items such as non-asbestos insulation removal, universal waste management, equipment liquidation (dependent on market conditions), demolition, scrap ferrous and non-ferrous tonnage and credit estimate.

APTIM conducted a detailed system by system analysis to determine isolation points throughout Cholla Unit 4 including a later estimate to include the other three units as well as common facilities to understand the complexity of isolating the unit from the rest of the plant and the potential capital costs associated with keeping systems operational once the Unit 4 equipment was removed from service. These systems include but are not limited to service water, fire water, condensate, compressed air, electrical and controls systems. Eventually the retirement of entire the plant was planned



### CLIENT

**Arizona Public Service Company/PacifiCorp**

### PROJECT HIGHLIGHTS

- ▶ Plant size: 1,027 MW
- ▶ ACM abatement survey
- ▶ Universal and hazardous waste inventory
- ▶ Detailed engineer's cost estimates
- ▶ Demolition execution plan

## ARIZONA PUBLIC SERVICE, FRUITLAND, NEW MEXICO – FOUR CORNERS POWER PLANT DECOMMISSIONING STUDY UNITS 4 & 5

APTIM presented APS the Four Corners Units 4 and 5 Harvest Study, which included a complete review of the Facility Wide Indicative Demolition Cost study. This study included the APTIM team working in concert with APS Four Corners engineering, planning, accounting subject matter experts (SME). The result of the effort provided APS data for integrating forecasted costs for current material condition issues with the uncertainty around the stations survivability with scenarios.

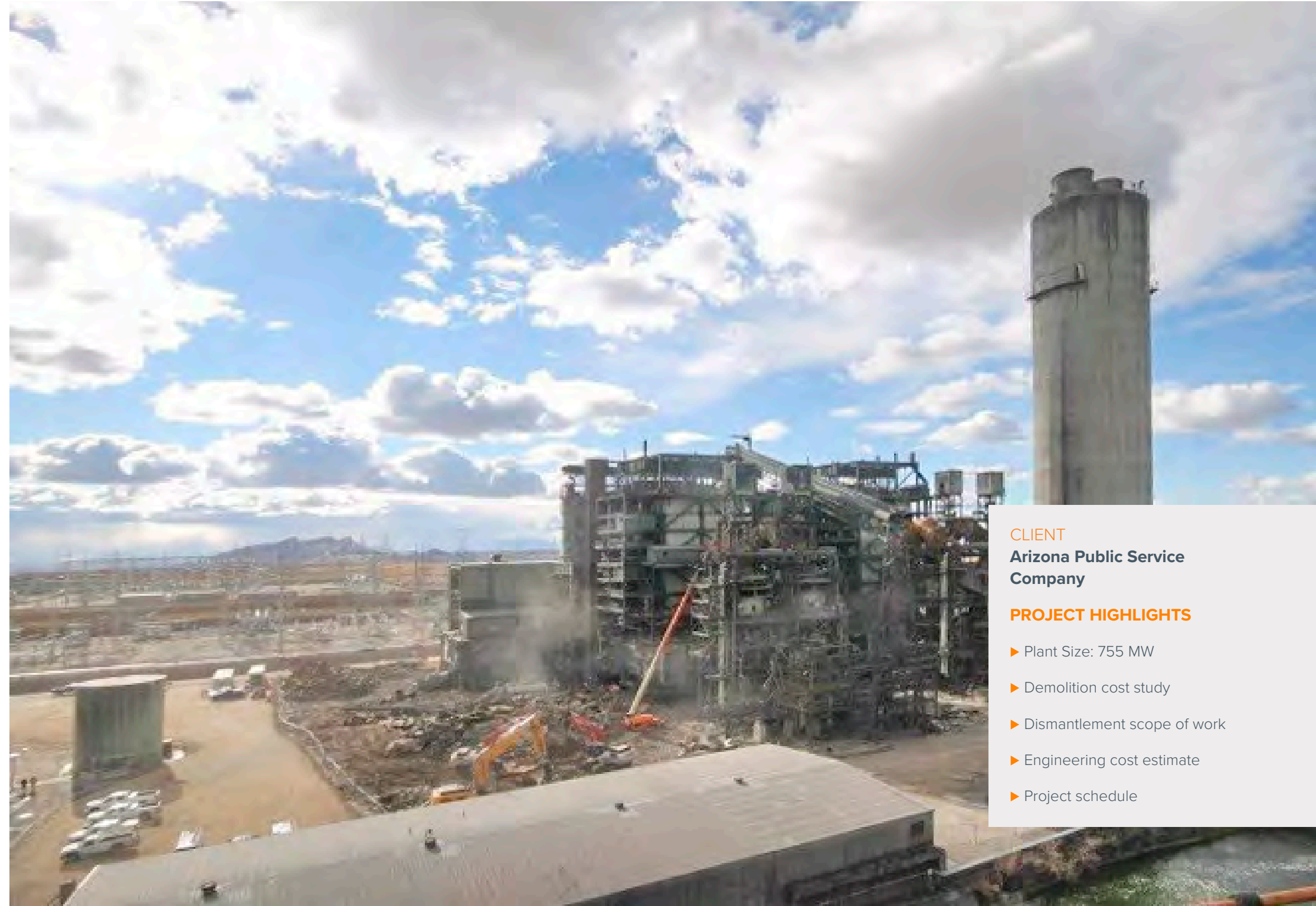
1. Status quo current budget request developed by the plant staff, with an assumed operating timeframe.
2. An O&M budget recommendation for two specific run lifes, followed by decommissioning.

The assessment characterized project costs and potential revenue sources associated with D&D of the Four Corners Generating Station, Units 4 and 5.

The purpose of the report with respect to Units 4 and 5 was to provide an updated resource that reflected the latest plant configuration relative to work performed at the plant over the past couple years, and to account for demolition and salvage cost changes. The revised assessment provided APS with a dismantlement/demolition scope of work, and an associated engineering cost estimate and schedule for these activities.

The deliverables assisted APS in determining the optimum path for completing the remaining station dismantlement and demolition, considering the project's short and long-term economics. In order to provide recommendations regarding shut down scenarios, APTIM performed four data collection tasks:

- ▶ Task 1 – Operations and Maintenance Assessment
- ▶ Task 2 – Development of Dismantlement Engineering Cost Estimate
- ▶ Task 3 – Schedule Development
- ▶ Task 4 – Detailed Site Assessment Survey



**CLIENT**  
**Arizona Public Service  
Company**

### PROJECT HIGHLIGHTS

- ▶ Plant Size: 755 MW
- ▶ Demolition cost study
- ▶ Dismantlement scope of work
- ▶ Engineering cost estimate
- ▶ Project schedule

## NV ENERGY, MOAPA, NEVADA – REID GARDNER GENERATING STATION UNITS 1, 2, 3 & 4 D&D ENGINEERING

The NV Energy Reid Gardner Station is a 557-megawatt, coal-fueled, steam- electric generating plant with four operating units. Units 1 and 2 went into service in 1965 and 1968, respectively. Unit 3 went into service in 1976. Units 1, 2, and 3 each produce 100 megawatts using Foster Wheeler boilers and GE turbine generators. Unit 4 went into service in 1983. Unit 4 uses a Foster Wheeler boiler and Westinghouse turbine generator.

APTIM provided overall construction management and engineering services for the D&D work at NV Energy's Reid Gardner Generating Station. During pre-D&D execution planning, APTIM performed system-by-system walk downs to identify environmental and safety issues, as well as to perform ACM and waste (universal and hazardous) surveys.

Preliminary design drawings and information gathered from the site indicated numerous systems needed further investigation regarding their relationship to the remaining operating units. We performed detailed engineering of plant components and the relationship to plant operations (existing utilities - storm drains, water mains, sanitary sewer lines, natural gas lines, instrument and controls systems, etc.) to separate the common systems and allow Unit 4 to continue operating.

We placed full time planners on site to work within NV Energy's network to write work orders and job plans for the decommissioning. APTIM wrote over 500 job plans detailing work that performed by NV Energy personnel. Our engineers prepared specific decommissioning standards and the overall request for proposal (RFP) for demolition and utility reroutes, as well as assisting NV Energy in selecting a demolition contractor and establishing an overall budget.



**CLIENT**  
**NV Energy**

### PROJECT HIGHLIGHTS

- ▶ Plant Size: 557 MW
- ▶ Asbestos survey
- ▶ Universal and hazardous waste material surveys
- ▶ Utility reroute engineering assessments and detailed design
- ▶ Construction management





## SANTEE COOPER, MONCKS CORNER AND CONWAY, SOUTH CAROLINA – JEFFERIES & GRAINGER GENERATING STATIONS D&D

APTIM prepared a comprehensive report on the asset recovery, liquidation, and dismantlement for the Jefferies and Grainger Stations in South Carolina for Santee Cooper. Components of this report included:

- ▶ Identified and characterized specific plant assets scheduled for dismantlement and removal
- ▶ Evaluated options for sale and/or disposal of existing equipment at the two facilities.
- ▶ Prepared engineering cost estimates for the proposed dismantlement project.
- ▶ Prepared an inventory and valuation of recoverable components associated with plant assets scheduled for removal including equipment (pumps, motors, turbine generator sets, heaters, etc.), components (valves, controls, etc.), structural steel, high-value non-ferrous materials (copper, brass, etc.). Revenue potential was defined through detailed take-offs associated with recyclable ferrous/non-ferrous materials, comparison of calculated metals tonnages to current market pricing, and valuation of major equipment components for sale or salvage.
- ▶ Prepared a sequence of project activities from final cleaning, final decommissioning steps required for equipment protection (i.e., nitrogen blankets for sensitive equipment with resale value), equipment inventory/initial marketing activities, SCM abatement (required activities for higher value equipment removal), equipment sale/rigging/removal, and facility dismantlement and removal.
- ▶ Identified utilities associated with these assets requiring cut/cap activities



APTIM prepared a demolition specification, which was used as the basis of a demolition Request for Quotation (RFQ). The specification describes the specific requirements for the demolition including environmental and health and safety compliance.

APTIM performed an evaluation of alternatives for closure of a 325-acre cooling pond also known as Lake Busbee at the Grainger Generating Station. Options evaluated included leaving as a pond, developing into a wetland, and a combination of wetland and lake and a minimum alternative to drain the lake. APTIM evaluated the alternatives in terms of implementability and cost. The evaluation incorporated potential future uses of Lake Busbee. For the wetland alternative, APTIM evaluated the potential for obtaining mitigation credits. APTIM also identified the specific design requirements and provided summary costs for modifications and O&M as part of the overall alternative evaluation.

APTIM provided certified appraisal services for valuing an ash processing facility co-located on Santee Cooper's Generating Station site. We performed the appraisal under American Institute of Certified Public Accountants (AICPA) based on the standards specified in Uniform Standards of Professional Appraisal Practice (USPAP). This standard requires three appraisal methods; a comparison to the sale of similar facilities, a cost approach, and an earnings approach.



**CLIENT**  
**Santee Cooper**

### PROJECT HIGHLIGHTS

- ▶ Plant Size:  
Jefferies – 346 MW  
Grainger – 163 MW
- ▶ Asset valuation and sale management
- ▶ Developed work sequence and plan
- ▶ Demolition specification development
- ▶ Cooling pond closure feasibility evaluation
- ▶ Certified appraisal services

## POTOMAC ELECTRIC POWER COMPANY (PEPCO) ENERGY SERVICES, WASHINGTON DC – DECOMMISSIONING SERVICES, WASHINGTON

The Benning Road Generating Station (BGS) is part of a 77-acre facility on the east bank of the Anacostia River and was used initially to provide power to the Washington DC streetcar system in 1906. Modifications through a series of expansions of the plant from 1920 through 1950 provided greater power generation capability eventually evolving the BGS facility into a 550 MW coal fired facility. Previous power generating operations were decommissioned and replaced with two new steam turbines, Unit Nos. 15 and 16, in 1968 and 1972 respectively. Unit No. 15 is a Combustion Engineering drum type, pressure fired superheated steam boiler and Unit No. 16 is a Babcock and Wilcox drum type pressure fired superheated boiler with peak ratings of 1,965,000 pounds of steam per hour. Unlike previous coal-burning operations at BGS, Unit Nos. 15 and 16 were designed to burn No. 4 and No. 2 fuel oil.

The Buzzard Point Generating Station (BPGS) is a much smaller facility than BGS and contains sixteen combustion turbines (CTs), of which one has been decommissioned from service. Eight CTs are located on the west side and eight on the east side of the 1 square block facility. The maximum output for each CT is 16 MW. The CTs operate during peak power demands and have been operating since June 1968. There are two 440,580-gallon aboveground storage tanks (ASTs) located in the northern end of the property. The tanks contain No. 2 fuel oil. The tanks were upgraded with new bottoms and cathodic protection in the mid-1990s

There are two non-PCB transformers in the combustion turbine yard at Buzzard Point, one for each bank of CTs. The generation site also includes a control room, office and work trailers, and associated electrical equipment. The BPGS will remain as a substation for the near term while assets related to the generation side of the facility will be removed.



**CLIENT**  
**PEPCO Energy Services**

### PROJECT HIGHLIGHTS

- ▶ 550 MW
- ▶ Valuation assessment
- ▶ Cold, Dark, and Stable closure
- ▶ Engineered drawings for demolition
- ▶ Demolition design plan

Both BGS and BPGS terminated peaking power generation services.

The scope of work for this project included performing a valuation assessment of both facilities undergoing cold closure activities (i.e. draining of all hazardous materials, terminating all electrical service to the facilities and removal of equipment for either scrapping or use at other PEPCO facilities).

Our decommissioning service team performed a series of site visits to determine the salvage value of all ferrous and non-ferrous metals for potential recycle, assembled listings of all sale-able assets including an Opinion of Value (OPV) for the equipment for both facilities, re-confirmed existing asbestos and hazardous material surveys previously conducted at both facilities, developed specific demolition estimates, and assembled economic analyses for full scale and partial demolition scope scenarios for both facilities. A drawing package including approximately 70 drawings was assembled and annotated in addition to a full bid specification package was developed.

As part of this submittal, a Demolition Design Plan (DDP) for both facilities summarizing all assessment recommendations was submitted to PEPCO as part of a 50% design effort. The DDP encompasses an economic valuation related to terminating both facilities with the ultimate goal of providing PEPCO an effective strategy to manage the future use of these properties for potential re-development.

## PACIFIC GAS & ELECTRIC COMPANY, EUREKA, CALIFORNIA – HUMBOLDT BAY POWER PLANT DECOMMISSIONING

The Humboldt Bay Power Plant (HBPP) site is located approximately 4 miles southwest of Eureka, California. The site consists of approximately 143 acres located on the mainland shore of Humboldt Bay. Pacific Gas & Electric (PG&E) operated Unit 3 as a 65 MW natural circulation boiling water reactor (BWR). The Atomic Energy Commission (AEC) granted a construction permit for Unit 3 on October 17, 1960, and construction began in November 1960. The AEC issued Provisional Operating License No. DPR-7 for Unit 3 in August 1962. Unit 3 achieved initial criticality on February 16, 1963, and began commercial operation in August 1963.



PG&E shutdown Unit 3 for annual refueling on July 2, 1976. At this time, PG&E conducted seismic studies and implemented seismic modifications. Unit 3 remained in a shutdown condition pending completion of ongoing seismic and geologic studies. In December 1980, it became apparent to PG&E that the cost of completing required back fits would likely make it uneconomical to restart Unit 3. Work was suspended at that time awaiting further guidance regarding back fitting requirements. In 1983, updated economic analyses confirmed that restarting Unit 3 would not be economical. Therefore, in June 1983, PG&E announced its intention to decommission Unit 3. In 1988, the Nuclear Regulatory Commission (NRC) approved the SAFSTOR Plan for Unit 3, and revised the operating license to a possess-but-not-operate license. An Independent Spent Fuel Storage Installation (ISFSI) stores all fuel from the facility.

The HBPP Unit 3 Decommissioning Project started with removal of radiologically contaminated systems. The decommissioning and demolition project consisted of five main areas of work:

1. Intake and Discharge Canal Remediation
2. Nuclear Facilities Demolition and Excavations
3. Caisson Removal
4. Office Facility Demobilization
5. Final Site Restoration

In addition to the scopes of work above, PG&E also included EPC responsibilities for the HBPP site, which allowed APTIM to take over all site work (i.e., electrical, maintenance, ground care, etc.) so that there was only one contractor operating the site and PG&E could revert to a more supervisory role. APTIM was the prime contractor. We used multiple subcontractors to complete the work. PG&E has a requirement that a minimum of

30% of the work be subcontracted to small, disadvantaged, or minority firms. As such, APTIM worked with a variety of firms to fulfill this requirement.

The APTIM team achieved all major milestones including:

- ▶ Completion of reactor pressure vessel segmentation and removal
- ▶ Demolition of Liquid Radwaste Building to grade
- ▶ Started Cutter Soil Mix wall construction
- ▶ HBPP #3 Refueling Building systems and components removal achieved Open Air Demolition Status
- ▶ Implementation of Earned Value Management System
- ▶ Completed 50% of Discharge Canal Remediation
- ▶ Reduction of RCA to support RFB Open Air Demolition

An Over Target Baseline (OTB) was approved which incorporated a solution to the biggest challenge the project was facing—removal of the approximately 60-foot diameter by 80-foot deep caisson structure adjacent to the Pacific Ocean that posed significant safety and groundwater control challenges. The solution—using Cutter Soil Mix (CSM) technology and a one-of-kind, custom built CSM piece of equipment to install one of the largest and deepest CSM deep shoring and water-cutoff systems ever employed.

On this project, APTIM managed over 135 million pounds of material including contaminated waste, reuse material, and backfill. The project shipped over 1,000 containers of contaminated waste without violation.

The finished CSM deep shoring structure and water cut off system is 110 feet in diameter and approximately 90 feet deep in-situ, surrounding the caisson structure with the outside ring (water cut off wall) extending to a depth of 174-feet effectively cutting off groundwater flow. In order to reach a depth of 174-feet, a one of a kind specialty CSM drill rig was constructed in Germany by Bauer Equipment and shipped to the HBPP site. Prior to excavation, the interior of the CSM structure will be dewatered then APTIM will excavate the caisson structure from within utilizing conventional excavation methods.

PG&E awarded APTIM the “Safety Supplier of the Year” at PG&E’s 10th annual Supplier Awards Dinner at the San Ramon Valley Conference Center as a result of our efforts on this project. . Recognized for maintaining a zero recordable safety record with nearly 700,000 hours worked in two years and more than 1100 safe workdays, the APTIM Humboldt Bay Power Plant team has worked hard to achieve and maintain the highest levels of safety and quality work solutions for PG&E. Additionally, for consecutive years, APTIM was awarded the prestigious Sibley Safety and Health Award. Named after PG&E’s former Chairman and Chief Executive Officer, Shermer L. Sibley, the award recognizes organizations that make outstanding contributions toward the safety and health of the public and our employees.

### CLIENT

**Pacific Gas & Electric  
Company**

### PROJECT HIGHLIGHTS

- ▶ Unit 3 Size: 65 MW
- ▶ Full cycle D&D professional services and program management from initial assessments to demolition and dismantlement oversight
- ▶ Specification development
- ▶ Demolition contractor selection support
- ▶ Planning
- ▶ Environmental assessments
- ▶ Regulatory support

**“This team’s commitment to safety and excellence is reflective of the entire organization’s focus and demonstrates the high caliber of people we have across Generation.”**

**Ed Halpin, Senior Vice President  
Generation and Chief Nuclear Officer**

## GE FINANCIAL, TRONA, CALIFORNIA – ACE COGENERATION FACILITY ASSET VALUATION ASSESSMENT

O'Melveny & Myers, LLP (OMM) retained APTIM to complete an Asset Valuation Assessment to evaluate project costs and potential revenue associated with the D&D of the ACE Cogeneration Facility in Trona, California. APTIM completed this assessment for the operating unit, related tanks and outbuildings, subsurface structures and components, the ash disposal site, as well as the offsite limestone quarry associated with its operation.



The study focused on the following items:

- ▶ Inventory and valuation of salvageable items
- ▶ Inventory of hazardous materials on site, including a visual assessment of ACM
- ▶ Review of cost estimate for closure of onsite ash storage
- ▶ Review of cost estimate for closure of offsite limestone quarry
- ▶ Detailed Scope of Work (SOW) for demolition
- ▶ Sequence of project activities
- ▶ Rough order of magnitude (ROM) engineers cost estimate

Constructed in 1989, ACE is a coal-fired unit that has a nominal net electrical output of 96 MW and has a range of base load capacity between 89 MW and 104 MW. ACE is a qualified facility (QF) under Public Utility Regulatory Policies Act (PURPA) that process electric power for sale to Southern California Edison Company (SCE), and process steam to the neighboring SVM chemical processing plant.

The boiler is a circulating fluidized bed design, which is able to burn bituminous coal or petroleum coke (petcoke). The coal is supplied from mines in Utah. Emissions control is accomplished by several systems onsite.

Limestone is injected into the fluidized bed to aid in reduction of sulfur dioxide. The facility has a limestone unloading facility, which is able to unload aggregate limestone to be crushed or pulverized which is reclaimed directly into the limestone silo. A limestone quarry owned and operated by ACE, is located 20 miles north of the plant, provides the source for lime which is trucked in as needed during periods of power generation.

Anhydrous ammonia is injected into the flue gas stream to aid in nitrogen oxide reduction. The facility is equipped with a fabric reverse gas baghouse, which is the primary source of ash removal from the flue gas stream.

APTIM's general approach to the project included a review of plant documentation as an initial step. This included plant descriptions, equipment listings and available site drawings. This initial phase also included the completion of interviews with plant personnel familiar with operations and systems. Documentation provided by plant personnel, including as-built structural and

electrical drawings, were assumed to be current and representative of the existing state of the plant. The team further verified this in field during the walk through over a four-day plant visit.

The APTIM team conducted the site inspection to further develop information for use in the quantification of project costs and revenue components. During this inspection period, APTIM personnel estimated the value of commodities that could be extracted from the plant. The inspection allowed the estimating team to gather dimensions, conduct visual inspections of equipment and materials, and review plant data. This activity provided a conservative estimate of available structural and stainless steel, condenser tubing, copper cabling/busbar, and other high value non-ferrous materials identified throughout the plant.

During this inspection, APTIM also performed a visual survey of the facility to identify environmental issues that would require management and capital investment prior to unit retirement and thus affecting the potential economics of the valuation. Examples of environmental conditions reviewed by the estimating team included potential ACM, universal and/or hazardous wastes on site, and hazardous and non-hazardous materials requiring disposal off site as part of the decommissioning process.

The project scope included a visual ACM survey that was completed and did not identify materials considered to be suspect. Further sampling was required to confirm visual survey results, which was included in the recommendations within the final project report.

In addition to project cost and revenue estimates, APTIM developed a conceptual scope of work for dismantlement and demolition project activities. This work scope addressed complete demolition of all station structures and systems including concrete slabs, piers and foundations, as well as subsurface facility components. In order to develop this conceptual work scope, APTIM reviewed drawings, completed a review of structures and spatial project limitations, completed volume estimates of remaining structural voids that required fill, estimated the volume of backfill and determined the volume of excess material that will require off-site transport and disposal. APTIM compiled all results of the valuation including the economics and final recommendations into a final report and provided to the client.



**CLIENT**  
**GE Financial Services**

### PROJECT HIGHLIGHTS

- ▶ Plant Size: 96 MW
- ▶ Asset valuation assessment
- ▶ Hazardous material inventory
- ▶ Scope of Work for Demolition
- ▶ Engineer's cost estimate

## PACIFICORP, OGDEN, UTAH – LITTLE MOUNTAIN GENERATING STATION DECOMMISSIONING PROJECT

APTIM served as Owner's-Engineer to PacifiCorp for the Little Mountain Generating Station. During this project, APTIM performed the decommissioning activity list review and advised PacifiCorp on activities that were required per state and federal rules.

APTIM reviewed the demolition scope of work and all documents for technical content and overall strategy. Part of the review included an on-site assessment of site conditions, systems, components, inventory, and preparation of the preliminary quantification of site assets and salvage value. This formed the basis of the demolition approach and scoping document for the subsequent demolition RFP.

Our team reviewed PacifiCorp's cost estimate and created our own cost estimate for comparison. This cost analysis provided line item detail and served as the financial baseline for the demolition project to continue. The baseline created also served as a method to compare bids received from the demolition/asset recovery RFP.

APTIM created a bidders list and pre-qualified bidders for PacifiCorp. The prequalification included but was not limited to reviewing potential bidders safety statistics, corporate financial information, contacting client references, reviewing market strength, capabilities, and completion schedules. APTIM also reviewed the bids from the contractors and created a method of normalizing bids so it was a true comparison of like items. We provided the bid evaluation to PacifiCorp and we are currently awaiting client approval.



APTIM provided PacifiCorp's Little Mountain Power Plant located in Ogden Utah Decommissioning Support



CLIENT  
**PacifiCorp**

### PROJECT HIGHLIGHTS

- ▶ Plant size: 16 MW
- ▶ Subcontractor selection and bid support
- ▶ Site assessments
- ▶ Developed demolition approach
- ▶ Cost estimate

## PACIFICORP, WYOMING AND UTAH – MULTI-SITE DECOMMISSIONING STUDY

APTIM prepared design basis, cost estimates, schedule estimates and other relevant information for decontamination, decommissioning, demolition and subsequent remediation of selected thermal plants in the PacifiCorp fleet. We performed the work in two phases: Prepare Overall Decommissioning Scope Design Basis and Prepare Cost Spreadsheet and Reports. This information was used for depreciation dockets and setting rates.

APTIM reviewed the following sites:

- ▶ Jim Bridger Units 1, 2, 3 and 4
- ▶ Carrant Creek
- ▶ Huntington Units 1 and 2
- ▶ Dave Johnston Units 1, 2, 3 and 4

The Decommissioning Scope Design Basis report specifically addressed:

- |   |   |
|---|---|
| ▶ Demolition permitting requirements                                    | ▶ Reclamation of industrial and coal combustion residuals landfills |
| ▶ Removal of solid fuels  | ▶ Disposition of underground infrastructure                         |
| ▶ Removal and disposal of ash   | ▶ Removal of foundations  |
| ▶ Operating permit closeout   | ▶ Reclamation of the site   |
| ▶ Handling of asbestos inside equipment and at equipment interfaces     | ▶ Finished grade of the site  |
| ▶ Installation of permanent perimeter control                           | ▶ Long-term access control  |
| ▶ Closing of raw water, evaporation and coal combustion residuals ponds |   |

Considerations in the Decommissioning Scope Design Basis report included future status, expected uses, needs, requirements and conditions of the site following demolition and remediation. Also addressed in the Design Basis Report were items related to D&D such as: access, perimeter control, monitoring, long-term remediation, equipment, security, grounds management, cleanup, material removal and disposal prior to demolition, and restoration.

Detailed in the report was the required condition of the power plant prior to the start of decommissioning and the start of demolition with regard to hazardous materials, oils, fuels, and regulated wastes and materials. Specifically addressed was lead, ACM, polychlorinated biphenyls (PCB), chlorofluorocarbons (CFCs), radioisotopes, oils, fuels and miscellaneous



APTIM conducted a Multi-Site Decommissioning Study for PacifiCorp in Wyoming and Utah

hazardous materials. Sources of PCB included lamp fixtures and ballasts. Sources of CFC included air conditioning systems and air conditioning compressor oils. Miscellaneous hazard materials included mercury, acid, caustic, solvents and other materials.

A general description of the activities that the Owner, vendors and contractors needed to perform to prepare the power plant for demolition were included in the report.

### CLIENT PacifiCorp

### PROJECT HIGHLIGHTS

- ▶ Plant sizes:
  - › Jim Bridger - 2,442 MW
  - › Carrant Creek - 525 MW
  - › Huntington - 1,038 MW
  - › Dave Johnston - 922 MW
- ▶ Cost estimates
- ▶ Schedule estimates
- ▶ Design basis
- ▶ 4 facilities, 11 power generating units

## EMPIRE DISTRICT ELECTRIC COMPANY, RIVERTON, KANSAS – RIVERTON POWER STATION DECOMMISSIONING STUDY

Empire District Electric Company (Empire) selected APTIM to complete a decommissioning study to better define project costs and risks associated with decommissioning a portion of Riverton Power Station. There are currently six units located at the Riverton site. APTIM completed this decommissioning study for Units 7, 8 and 9 and buildings directly associated with their operation. We completed this assessment project on time and under budget.



River Power Station, Riverton, Kansas

Units 7 and 8 are conventional steam boilers that were converted from burning Powder River Basin coal to strictly natural gas. Unit 9 is a small combustion turbine with a heat recovery steam generator (HRSG) used to augment the steam units for power generation. The three units to be assessed as part of this decommissioning study were operational during the assessment.

The Riverton Decommissioning Study focused on the following items:

- ▶ Inventory and valuation of salvageable items
- ▶ Inventory of hazardous materials on site
- ▶ Detailed SOW for demolition
- ▶ Sequence of project activities
- ▶ ROM engineering cost estimate
- ▶ Potential capital projects

APTIM reviewed documentation regarding the plant including plant descriptions, data books, nameplate information and equipment listings as well as conduct interviews with plant personnel. Assumptions included that as-built drawings depicting structural and electrical system conditions are up to date and represent the existing state of the plant.

With the completed report and cost estimate Empire is able to use the site assessment in developing long-term cost recovery models that will be used as part of discussion with the state public utility commission.

APTIM conducted a detailed multi-day walk down of the facility. The inspection allowed the estimating team to gather dimensions, conduct visual inspections of equipment and materials, and review plant data. This activity provided the conservative estimate of structural and stainless steel, condenser tubing, copper cabling/busbar, and other high

value non-ferrous materials identified in plant.

During this inspection, APTIM performed a visual survey of the facility to identify environmental issues that required management and capital investment prior to unit retirement. Examples of environmental conditions noted by the estimating team included suspect or potential asbestos containing materials, universal and/or hazardous waste, and hazardous materials. A comprehensive ACM survey, with sample collection was not completed for purposes of this study. The visual ACM survey identified materials considered suspect or potential, but sampling would be required to confirm visual survey results. Although this type of survey is sufficient for study objectives, results were considered conservative and not necessarily reflective of actual ACM quantities. A detailed survey was recommended to better refine the cost estimate.

In addition to project cost and revenue estimates, APTIM developed a conceptual work scope for dismantlement and demolition project activities. This work scope addresses two project options - complete demolition to grade, and demolition of concrete foundation and support structures to 24 inches below grade. In order to develop this conceptual work scope, APTIM reviewed drawings, completed a review of structures and spatial project limitations, completed volume estimates of remaining structural voids that requires fill, estimated the volume of backfill and determined the volume of excess material that will require off-site transport and disposal. The assessment team found local facilities that could be used for disposal of construction debris and provide backfill material to aid in providing the assessment site-specific costs.

**CLIENT**  
**Empire District Electric  
Company**

### PROJECT HIGHLIGHTS

- ▶ Plant size: 88MW
- ▶ Decommissioning study
- ▶ Scope of work development
- ▶ Valuation of salvageable items
- ▶ Hazardous material inventory
- ▶ ROM engineering cost estimate

## EXELON, PENNSYLVANIA – EDDYSTONE GENERATING STATION UNITS 1 & 2

APTIM provided fleet-wide decommissioning support services to Exelon at multiple facilities throughout the US, including sites in Maryland, Massachusetts, Pennsylvania, and Texas. Services provided include pre-demolition ACM and hazardous materials surveys, station valuation assessments, demolition scope development, station decommissioning and demolition engineering cost estimates, and site redevelopment studies. Through this program, APTIM developed information to characterize planned station retirements based on work activities, cost and revenue potential providing Exelon with critical information to support decommissioning and site closure planning decisions. APTIM has been Exelon's contractor of choice for more than a decade.



*Eddystone Generating Station Units 1 and 2 before demolition, Eddystone, Pennsylvania*

As part of its fleet wide decommissioning support services contract with Exelon, APTIM provided comprehensive D&D services for Units 1 and 2 at Eddystone Generating Station, which is situated along the Delaware River in Eddystone, Pennsylvania, just south of Philadelphia. Construction of Eddystone began in the mid-1950s, with Units 1 and 2 coming online in 1960. Unit 1 and Unit 2 were both supercritical steam boiler-turbine generator units that operated on coal. APTIM provided comprehensive D&D services for Unit 1 and 2. Eddystone's natural gas and residual oil-fired steam electric units, Units 3 and 4, remained in operation during D&D of Units 1 and 2.

APTIM's varied scope of services included the following:

**Development of System-Specific, Risk-Based Residual Removal Procedures for All Critical Plant Systems** – APTIM developed decommissioning standards designed to incorporate best practices and regulatory requirements for removal of hazardous and process related residual materials from plant systems scheduled for closure. These standards addressed removal of lubricants, acids, caustics, fly ash, bottom ash and coal/coal-fire, as well as methodology to allow “permanent” equipment disconnection from electrical energy.

**Decommissioning Support** – APTIM prepared technical specification and procurement packages for systems where plant personnel possessed limited experience such as closure of the coal pile and coal pile runoff collection system. APTIM prepared a detailed project description and work scope, task schedule, and bid pricing sheet. Packages were used by Exelon to procure qualified suppliers. APTIM supported Exelon in coordinating mandatory pre-bid site inspections, responding to questions, evaluating bids, and providing onsite construction management, and field oversight services.

**Asset Management & Investment Recovery Project Support** – APTIM supported Exelon's asset management group with developing strategies designed to maximize return on investment throughout facility closure process. Planned post-decommissioning activities included equipment liquidation, high-value materials salvage (surgical demolition), partial facility demolition (steel “rich” structures), ACM abatement and complete facility demolition. APTIM prepared technical specifications and procurement packages for an equipment liquidation approach and project scope. Exelon used these packages to procure qualified suppliers for completion of these tasks. APTIM supported the project and procurement team throughout the procurement process. This support included development of bid documents, development of a pre-qualified vendor list comprised of Exelon and APTIM suppliers that have demonstrated an ability to complete tasks of this nature, coordination of mandatory pre-bid site inspections, completion of bid addenda – responses to vendor questions,

and receipt and evaluation of vendor bids.

**Generating Station Valuation Services** – APTIM supported Exelon's asset and project management groups completing station closure valuation surveys for Eddystone Units 1 and 2; as well as other Exelon units scheduled for retirement. Surveys provided quantified cost and value estimates for all activities necessary to decommission, dismantle, demolish and restore a retired generating station. Cost/value quantification activities completed by APTIM include:

- ▶ Asbestos/hazardous materials removal.
- ▶ Operating system drain/de-oil activities.
- ▶ Residual materials (fly/bottom ash, coal fines removal).
- ▶ De-energizing/LOTO/permanent circuitry termination.
- ▶ Identified major equipment items that may have resale value, including estimate of current market value.
- ▶ Detailed scope/cost development for facility demolition.
- ▶ Detailed quantification of ferrous/non-ferrous materials available for recycling and estimating current market value.
- ▶ Cost/benefit analysis – provides an assessment of each project regarding whether unit retirement will be cash- negative, neutral or positive.

**Estimating Support** – APTIM provided estimating support to Exelon at Eddystone and five other partially active/retired plants. APTIM completed an extensive review of each facility, including a complete walk-down, drawing review and operations personnel interviews. APTIM classified quantities of asbestos-containing and hazardous materials by building location, floor elevation and/or equipment component and developed unit prices removal and disposal. We used unit pricing to develop engineering cost estimates for asset retirement obligation reserve reporting.

### Summary of Accomplishments

- ▶ Completed project ahead of schedule by 2 months and under budget by \$2M.
- ▶ Implemented aggressive material recycle and re-use program to maximize materials' value and reduce costs.
- ▶ Prepared technical specifications and bid packages for an equipment liquidation approach and project scope.
- ▶ Prepared technical specification and bid packages for systems where plant personnel possessed limited experience such as coal pile runoff collection system to expedite schedule and reduce cost.
- ▶ Developed decommissioning standards designed to incorporate best practices and regulatory requirements for removal of hazardous and process-related residual materials from plant systems scheduled for closure

### CLIENT

**Exelon Generation  
Company, LLC**

### PROJECT HIGHLIGHTS

- ▶ Plant size: 933 MW
- ▶ Fleet wide decommissioning support
- ▶ Asbestos survey
- ▶ Hazardous waste survey
- ▶ Valuation assessments
- ▶ Demolition scope of work development
- ▶ Engineering cost estimate
- ▶ Site redevelopment studies



## EXELON, DALLAS, TEXAS – MOUNTAIN CREEK GENERATING STATION DISMANTLEMENT/ DEMOLITION SCOPE & COST ESTIMATING SUPPORT

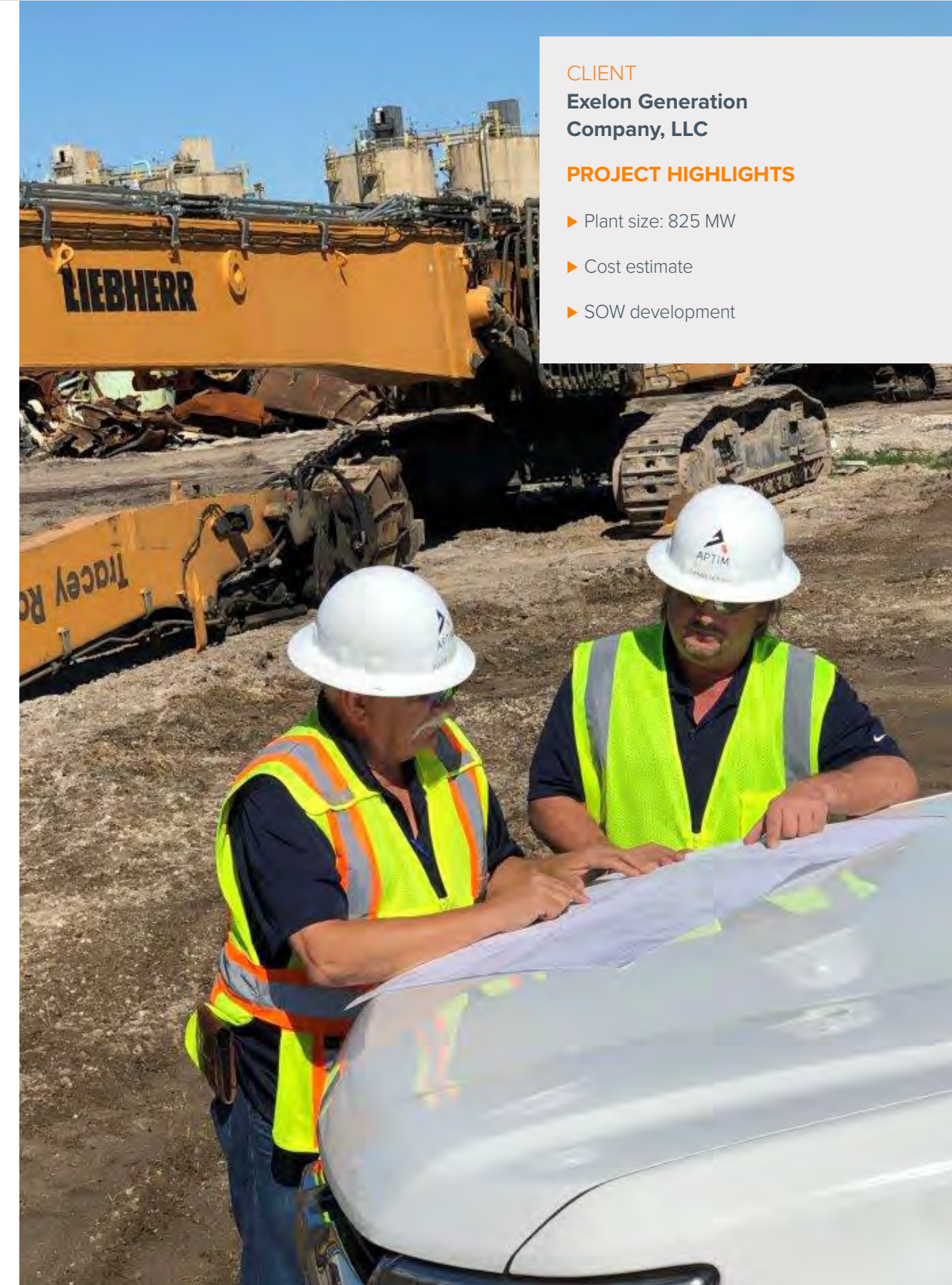
Exelon selected APTIM to develop a dismantlement/demolition SOW and an associated engineering cost estimate for the Mountain Creek Generating Station. These deliverables assisted Exelon in determining the optimum path for completing the station dismantlement and demolition, considering the project's short and long-term economics.

APTIM considered the remaining asset value and retirement costs in this assessment. We characterized the project revenue potential through completion of an engineering review of the generating station. APTIM completed this review, focused on identification and quantification of recoverable assets that generated revenue including high value salvage, equipment items available for reuse, and ferrous and non-ferrous metals. Other items assessed included the evaluation of project sequencing and property re-use – repower, redevelop (alternate use) – lease or sale.

APTIM quantified station retirement costs during this review. The project team also assessed the costs associated with asbestos abatement, dismantlement and demolition activities.



APTIM provided Exelon's Mountain Creek Generating Station located in Dallas, Texas D&D Scope and Cost Estimating Support.



### CLIENT

**Exelon Generation  
Company, LLC**

### PROJECT HIGHLIGHTS

- ▶ Plant size: 825 MW
- ▶ Cost estimate
- ▶ SOW development

## DRV, PISGAH FOREST, NORTH CAROLINA – ECUSTA PAPER MILL DEMOLITION, REMEDIAL DESIGN AND REMOVAL ACTION

APTIM performed site characterization, remedial engineering, design and construction, and waste transportation and disposal services for D&D of the Ecusta Paper Mill for DRV located in Pisgah Forest, North Carolina. This included pre-design and remedial investigations to define the nature and extent of contamination, land surveys, measurements of radioactivity, and soil/sediment sampling and analysis.

APTIM safely excavated and disposed of about 200,000 tons of radiological materials. APTIM operated the waste handling and transfer facility for gondola rail car loading for shipment to an approved treater, storer, and disposer. In addition, APTIM operated a fleet of trucks to transport excavated waste both on-site and from the 24 vicinity properties to the main waste handling facility adjacent to the rail line. Strict dust control requirements were in place as much of the waste was transported through residential areas.

APTIM successfully managed 9.7 million gallons of excavation water. The water was pumped into tank trucks to transport the water to an on-site water treatment system where it was treated for radiological constituents prior to discharge into the public sanitary sewer system. APTIM also developed and operated a validated on-site radiochemical laboratory to provide real-time analysis of soils, sediments, groundwater, and surface water verification samples.

APTIM prepared and implemented a site-specific environmental health and safety and radiation protection program at Maywood that complied with the all programmatic and contractual requirements. Since APTIM began work at Maywood, 1,017,000 construction labor-hours have been logged with only one lost time incident. APTIM conducted regular employee training for OSHA (40 and 8 hour), radiation worker, Department of Transportation, and emergency response. Regular radiation monitoring and reporting ensured that worker exposure was maintained. In addition, APTIM managed the 24/7 air monitoring program to ensure that airborne effluents were well within regulatory requirements and ALARA.

The Ecusta Paper Mill Site is a former specialty paper mill located in the small town of Pisgah Forest, North Carolina. The site lies adjacent to the Davidson River, a nationally recognized trout fishery, and is bordered to the west by the vast Pisgah National Forest and the Blue Ridge Mountains. At its peak, the mill once employed 10 percent of Transylvania's County's population. The Ecusta Paper Company property encompasses several parcels totaling approximately 530 acres. It was first developed in 1938 as the first cigarette paper manufacturing plant in the U.S. The production areas totaled approximately 310 acres. The property also included a 75 acre aeration/stabilization basin, a property used for a firing range and remote pumping station along the French Broad River, and several smaller surrounding parcels. The property owners declared bankruptcy and all production ceased in 2002. In 2007, the site was acquired by DRV, a subsidiary of Renova Partners, LLC located in Wellesley, MA.

Future site uses include purchase by developers for an upscale hotel/lodge, commercial/shopping areas, and various residential/ housing options.

The Ecusta Paper Mill is a superfund-caliber site. Site contaminants included dioxins, lead, asbestos, and mercury. DRV entered into an Agreement and Order on Consent for Removal Action by Bona Fide Prospective with USEPA Region IV for the execution of required Time Critical Removal Actions (TCRA). Non-TCRA actions were also identified with oversight by the North Carolina Department of Natural Resources to fulfill obligations for redevelopment under the State Brownfields program.

DRV retained APTIM to serve as the construction manager and the representative on site during demolition activities as well as execute the negotiated TCRA and non-TCRA activities. Under TCRA procedures, APTIM first investigated soil and groundwater associated with the former Electrochemical (EC) Building at the Ecusta Paper Mill site, Brevard, North Carolina. Mercury was used in a production process within the building from the 1950s to the 1970s and was the primary contaminant of concern for the investigations.

APTIM then completed an Engineering Evaluation/ Cost Analysis (EE/CA) which evaluated five distinct possible remedies for the area using the primary guidance criteria of effectiveness, implementability, and cost. After a Public Meeting and comment period, USEPA issued an Action Memorandum documenting the selection of a soil and liner capping system, monitored natural and institutional controls as the final remedy for implementation at the EC Building Area.

APTIM also designed and constructed the approximately 1 acre cap system over the EC Building slab consisting of a prepared subgrade, 40 mil textured HDPE liner, geo composite drainage system with cap drain system, and a low permeability/ topsoil covering.

Project challenges included the high hazard working conditions associated with the demolition and ACM abatement activities. Investigation activities performed concurrently with the demolition of site structures required extreme caution to ensure worker safety. Also, it was discovered during the review of historical drawings that the floor of the EC building contained sub-slab trenches which were filled with liquid mercury.

APTIM prepared the specifications for the demolition of the plant structures, including a massive four story boiler house. APTIM provided technical and cost reviews of the proposals received and selected D.H. Griffin to perform the demolition work. APTIM provided oversight and technical guidance of all waste management activities; oversight of demolition activities, including asbestos abatement and lead paint abatement; clearance for demolition to begin after abatement; air quality testing; and offsite deposition tracking of debris and recycle materials. APTIM also provided engineering and construction services for site storm water management and post-demolition grading.

### CLIENT DRV

### PROJECT HIGHLIGHTS

- ▶ Superfund site
- ▶ Site characterization
- ▶ Radiological materials
- ▶ Remedial engineering
- ▶ Design
- ▶ Construction management
- ▶ Waste transportation and disposal
- ▶ Prepared and implemented the Environmental H&S Radiation Protection Program

## OLD RAINBOW POWERHOUSE, GREAT FALLS, MT - DEMOLITION SERVICES



In 2019 NorthWestern Energy contracted APTIM to conduct an environmental assessment and develop a demolition specification for the Old Rainbow Powerhouse hydroelectric facility located near Great Falls, Montana. Originally when the Rainbow Dam was built, in 1910, it furnished water to an eight unit hydroelectric plant with a capacity of 36 megawatts. The original powerhouse was a brick masonry structure 415 feet long by 40 feet 6 inches wide, containing an interior structural steel frame. An extension (or “annex”) 86 feet long by 40 feet 6 inches is on the upstream side, and an extension (the “wood shop”) located on the downstream side of the original powerhouse. The building is divided into a turbine floor which contains eight turbine generator units, and two gallery floors. A new powerhouse, which was built to replace all eight of the original units, was commissioned in 2013 containing one 60-megawatt generator and is located several hundred yards downstream of the original powerhouse.

APTIM conducted a detailed environmental survey of the facility. Due to the age of the structure and the long-term use as a power facility, the team conducted extensive sampling to identify potential locations of PCB, ACM, mercury and lead paint. Many locations where older transformers, or breakers were located had PCB impacted concrete. The facilities interior was painted from floor to ceiling since the beginning of operations. Sampling was conducted on the paint to determine the level of lead in the paint.

Aptim also developed the demolition specification for the facility. Some of the challenges associated with the project were the tailrace discharge canal was still connected to the Missouri River, which posed a risk of contamination to a fresh water source. The terrain around the facility was very steep which limited the amount of equipment which would be able to be used during demolition activities. Existing penstock pipes upstream of the facility were flow filled when the original facility was shut down and were going to be left in place to minimize the disturbance of the soil on the hillside. Weather was also a factor, since during the winter it can get down to -40 degrees, which causes huge limitations on work.



## NEW JERSEY SCHOOL DISTRICT, TRENTON, NEW JERSEY – TRENTON CENTRAL HIGH SCHOOL CONSULTING SERVICES

Under a 3-year \$3 million Indefinite Quantity Contract (IDIQ) APTIM was awarded several task orders to assist the New Jersey Schools Development Authority (NJSDA) in pre-design environmental consulting services, ACM and lead paint abatement design and oversight, design/build engineering support services, and demolition and construction oversight.



Trenton Central High School was constructed in 1929-1931 and has recently fallen into a state of disrepair. NJSDA was tasked in the demolition and reconstruction of the school at its current location. APTIM's tasks included the following;

- ▶ Boundary and Title Surveys
- ▶ Utility and Geophysical Surveys
- ▶ Indoor Pool Evaluation
- ▶ ACM, Lead and Other Hazardous Materials Survey
- ▶ Structural Assessment and Demolition Design
- ▶ Development of a Demolition Bid Specification
- ▶ Development of an Asbestos Abatement Bid Specification
- ▶ Development of a Soil & Erosion Control Plan/Permit
- ▶ Soil and Ground Water Investigation and Report
- ▶ Attend Public Meetings and present findings
- ▶ Development Environmental Impact Statements
- ▶ Perform Historical, Cultural, Archaeological and Architectural Assessments
- ▶ Develop Construction Cost Estimates for Demolition and Asbestos Abatement
- ▶ Providing Bridging Documents to the Design/Build Contractor
- ▶ Provide asbestos abatement oversight and air monitoring for the removal of over 3 miles of underground pipe insulation.
- ▶ Provide Demolition Oversight and Health and Safety Review

### CLIENT NJSDA

### PROJECT HIGHLIGHTS

- ▶ ACM abatement design and oversight
- ▶ Lead paint abatement and oversight
- ▶ Design/build engineering support services
- ▶ Demolition and construction oversight

### The Challenge

This was a high profile political project as the Governor (Chris Christie) was criticized for non-action associated with the deteriorating conditions of the school for several years. The Governor assigned a new Chairman of the Board to NJSDA to specifically address the issues at Trenton Central High School. This project received a significant amount of press coverage from both newspaper and television. Due to its age and incredible architecture, historical societies have been requesting that portions of the school be saved in lieu of demolition. The Chairman of the Board for NJSDA initially committed to the concept that portions of the school could be saved. The NJSDA has been a state agency rebuilding schools in New Jersey for almost 15 years. To date, the demolition and reconstruction of Trenton Central High School is their largest and most complicated project. APTIM's Structural Engineers were tasked with determining whether certain structures could safely remain while the remainder of the building was being demolished. APTIM performed field evaluations and testing to determine what engineering controls (if any) would be needed to stabilize the building during demolition. APTIM developed a structural report that was released to the public and media. APTIM then attended a public board meeting to present our findings. APTIM determined that the sections of the building could not be saved and that full demolition was recommended. A final decision was made by the Trenton Board of Education to completely demolish the school and build a 100% new school. APTIM was retained to complete environmental impact statements, permits, and demolition and abatement bid specification for abatement and demolition.

### The Result

We were able to complete the above scope of work within 85% of the original budget. Because of this, additional scopes of work added by NJSDA could be completed without requesting additional funding. Our Team was able to meet and exceed all NJSDA schedule deadlines to keep the project moving. We received positive media attention for this project and we anticipate additional change orders as the project progresses to the next phase.



## SHOP RITE, CARMEL, NEW YORK – ASBESTOS ABATEMENT OVERSIGHT AND AIR MONITORING FLOOR TILE MASTIC REMOVAL

### Emergency Analysis of Asbestos Bulk Samples

During renovation activities, it was determined that exposed floor tile and its associated mastic were not previously sampled for ACM. APTIM provided analysis by both Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM) as required by New York State Asbestos Regulations. Nine bulk samples were collected and analyzed with immediate turnaround time for results.

### Collection of Background Air Samples

New York State Industrial Code Rule 56 requires that background air samples were collected for abatement projects greater than 160 square feet. Background samples were collected for each containment. Twelve Phase Contrast Microscopy (PCM) background air samples were collected for each containment area. Six containment areas were needed and constructed.

### Abatement Oversight and Air Monitoring

APTIM provided an on-site licensed New York State Project Monitor to provide abatement oversight and air monitoring. This individual reviewed abatement contractor submittals (e.g. training documentation, medical respiratory requirements), performed containment construction inspection, provided authorization to proceed with the abatement, enforced respiratory protection and collected daily and clearance air samples. This individual had the responsibility to stop work should significant issues occur (e.g. elevated analytical results, poor work procedures, etc.).

During the abatement, APTIM collected daily Phase Contrast Microscopy (PCM) air samples adjacent to the perimeter of each containment in accordance with New York State Part 56 Asbestos Regulations. APTIM estimated collection of at least seven air samples per shift would be necessary. The number

of clearance samples were twelve air samples for each containment as per the requirement of New York State Part 56 Regulations.

When the abatement was completed, APTIM prepared a final report. This report included tabular results of all air samples, a summary of abatement activities, copies of field data, photographs and results and conclusions.

CLIENT  
Shop Rite

### PROJECT HIGHLIGHTS

- ▶ ACM sample collection
- ▶ ACM abatement oversight
- ▶ Air monitoring



# RESUMES

APTIM has experienced D&D professional, technical, and construction oversight personnel who understand the specific needs of our fossil fuel generation facility Clients and Owners.



## SID ARCHINAL

### DIRECTOR OF OPERATIONS - REMEDIAL CONSTRUCTION & DEMOLITION

#### PROFESSIONAL QUALIFICATIONS

Sid Archinal has direct responsibility for all commercial construction projects in the USA. His group includes CCR, traditional environmental remediation, D&D and landfill drilling and gas system installation projects. He uses his 39+ years of direct environmental remediation experience to manage his group. He is responsible for business development, preparing proposals and estimates, staffing, safety, project performance, client satisfaction, schedule and overall profit. He ensures that the project is “kicked off” efficiently by transitioning in key project personnel and ensures that proper cost and schedule tools are used to track project success. He troubleshoots site problems by working closely with the project manager, project supervisor, technical staff, and client representative. He also acts as a conduit between the field and home office by assisting the project team in obtaining the support of the various home office departments (i.e., transportation and disposal, accounting, etc.). In his role as Director of Operations and previous roles as Project Director, Mr. Archinal has overseen the successful completion of over \$500 million in construction projects.

#### EDUCATION

- ▶ Diploma, Swissvale Area High School, Swissvale, Pennsylvania
- ▶ Drexel University – 3 years

#### HIGHLIGHTS

- ▶ More than 39 years of experience in environmental remediation, construction, and D&D services
- ▶ Managed Remedial Construction & Demolition Group since 2017

#### RELEVANT EXPERIENCE

**CCR Remediation** – Mr. Archinal successfully positioned his group to enter the CCR market and has so far successfully completed over 10 projects since 2017 with a combined value > \$75M. He has transitioned his group to understand the unique safety considerations and develop procedures and policies to complete the work safely and efficiently.

**Project Director, Hudson River Sediment Remediation Project, General Electric, Hudson River, New York** – Mr. Archinal is the Project Director for our Contract with GE to Operate the Sediment Processing Facility at their Hudson River Sediment Remediation Project, one of the largest and most complex remediation projects ever performed in the United States. As Project Director, Mr. Archinal oversees and has direct responsibility for all aspects of the 8-year long project including health and safety, project performance, client satisfaction, cost, schedule and staffing.

**Project Director, Grasse River Site, ALCOA, Massena, New York** – Mr. Archinal successfully managed the dredging, dewatering, and landfilling of more than 3,000 cubic yards of PCB-contaminated sediment from a river at the ALCOA Grasse River site. The project also involved the installation and maintenance of the silt curtain, the mechanical excavation of over 400 cubic yards of boulders and debris and the hydraulic dredging of the remaining river sediments. Both removal activities were performed under extremely low downstream turbidity and chemical levels were monitored by a third party. The river sediments were processed through a screening system, and plate and frame dewatering units to minimize the amount of solids requiring disposal in the landfill. The effluent water was treated through an on-site wastewater treatment plant, which was capable of treating 600 gallons of water per minute. The project was completed on schedule and within budget.

**Project Director, Columbus McKinnon Corporation Site, Tonawanda, New York** – Mr. Archinal successfully managed a project at the Columbus McKinnon Corporation site. The project involved contaminated soil excavation, select demolition, installation of a sheet pile bulkhead and the removal of more than 1,500 cubic yards of PCB-contaminated river sediment. APTIM was awarded the project by providing a value engineering alternative to our client that saved them over half a million dollars. Specifically, we proposed to press the river sediment using a plate and frame dewatering unit to minimize waste instead of solidifying the sediment after gravity dewatering as was proposed. Prior to hydraulically removing the sediment utilizing a horizontal auger dredge, an excavator, equipped with a rock bucket, was used to remove all material greater than 4 inches, working within the confines of a silt curtain. Onsite personnel worked through a New York winter and this project was completed under budget and on schedule.

**Project Director, PCB Delineation/ Remediation, New York** – Mr. Archinal managed ongoing PCB delineation/remediation at an active operating facility where more than 2,000 PCB samples were taken to delineate the PCB contamination. APTIM isolated cleaning was performed during second shift and weekends in key areas to limit the impact to ongoing operations.

**Project Director, Removal of a Former Gas Holder, New York** – Mr. Archinal managed the removal of a former gasholder for a utility in upstate New York. The work involved removing contaminated soil from within, below, and around the 66-foot-diameter, 20-foot-deep holder. A multi-design shoring system was installed to “step down” the excavation. The gasholder and higher contaminated soil were removed, working inside a temporary structure. A 35,000 cubic feet per minute air handling system was installed to treat air inside the building and prevent contamination from leaving the enclosure. Implemented an amending process (the first time approved in New York State) that saved our client over \$1.5 million in hazardous disposal costs.

**Project Director, Asbestos Abatement/ Decontamination/Demolition Project, Hastings, New York** – Mr. Archinal successfully completed this asbestos abatement/ decontamination/demolition project. The project was completed using union labor under the review of the NYSDEC. The project consisted of complete cleaning and demolition of eight buildings located on the Hudson River waterfront for future redevelopment as a Brownfield site.

**Project Director, Remediation Project, Watertown, New York** – Mr. Archinal managed a project to remediate contaminated groundwater, surface water and soil. The project consisted of pumping from 10 vertical groundwater recovery wells and 6 horizontal groundwater removal trenches and removing leachate from a solid waste disposal facility. The removed liquids were treated at an APTIM designed and built wastewater treatment facility. A 7-million-gallon retention pool was constructed to capture stormwater runoff for treatment with the groundwater and leachate. The treatment process was designed to treat up to 100 gallons per minute of leachate/groundwater. Then the treated leachate/groundwater and stormwater were combined, to treat the stream at a rate of 200 gallons per minute. The project also consisted of excavating over 60,000 cubic yards of contaminated soil and placing the soil in an on-site landfill, excavating over 4,800 cubic yards of sediment from an over 1 mile-long creek, and stabilizing and placing the sediment in a landfill; and capping two landfills (4 and 12 acres, respectively).

## GENE SCOTT, PE, GC D&D PROGRAM DIRECTOR

### PROFESSIONAL QUALIFICATIONS

Gene Scott has more than 40 years of global power experience encompassing plant permitting; engineering; design; procurement; construction; plant modification; operations and maintenance; decommissioning and demolition; and remediation and site restoration. His experience encompasses more than 70 power plants that stretches across the full power spectrum to include coal, natural gas, nuclear, geothermal, and hydro power plants. He is also a dispute resolution and claims avoidance expert, which yields significant value to his projects.

Mr. Scott has extensive experience in plant D&D and site restoration. Given his full lifecycle power plant experience, comprehensive D&D PM/CM background, Mr. Scott is uniquely qualified and ideally suited to provide senior leadership as Project Director for Demolition Projects

### RELEVANT EXPERIENCE

**Project Director, Professional Services for Decommissioning Management of SJRPP, JEA, Jacksonville, Florida**— Mr. Scott served as Project Director for decommissioning management at JEA's SJRPP. Services include providing design criteria development and bidding documents for demolition; subject matter expert (SME) support; bid evaluations; project management and engineering oversight on permitting, decommissioning, demolition, remediation/restoration and pond/landfill closure to satisfy CCR requirements. Accolades received from client for rapid staff buildup and overtime work to meet accelerated schedule for demolition contractor bid and award.

**Project Director, Four Corners Plant D&D Project, Arizona Public Service, Fruitland, New Mexico** – Mr. Scott served as Project Director for the D&D of Units 1, 2 and 3 (collectively 630 MW net). Under his leadership, the D&D project was completed on time and under budget with no lost time accidents. All material was recycled/re-used to maximize the plant's material value and minimize unnecessary added costs, with the exception of ACM and other hazardous waste. The material balance was a main focus and included using crushed and reused concrete for fill, returning asphalt to the batch plant, and metal segregation for resale to recyclers. In addition, a discharge canal was reclaimed by constructing a cofferdam and filling it with concrete rubble and river rock, and all disturbed areas were restored using compacted fill. Mr. Scott's experience, foresight, communication skills and management philosophy of timely resolution of issues and harmonious relationship with diverse groups/stakeholders resulted in schedule gains and cost containment. Specifically, relocating, repowering and/or replacement of systems and equipment, separating equipment common to Units 4 and 5 to allow continued operation of units 1, 2, and 3 during and after D&D. Mr. Scott also led evaluation efforts of proposals from demolition contractors; contractor selection; contractor oversight/management; and support of Capital Projects for continued operations post-demolition.

#### EDUCATION

- ▶ Bachelor of Science, Electrical Engineering, University of Nebraska, Lincoln, Nebraska
- ▶ Electronics Technician School, U.S. Navy

#### REGISTRATIONS/CERTIFICATIONS

- ▶ Professional Engineer, Electrical Engineering
- ▶ General Contractor's License

**Project Director, Reid Gardner Plant D&D Project, NV Energy, Moapa, Nevada** – For this project, Mr. Scott developed scope of work and demolition documents for system decommissioning, cut and cap locations, and equipment repowering in preparation for the issuance of an RFP for demolition of the four unit Reid Gardner Power Plant. Responsibilities included development of schedules, cost estimates, work sequences and procedures for separation and disposal of wastes, dust mitigation, recycling of materials and control of storm water.

**Construction Manager, San Onofre Nuclear Generating Station D&D Project, Southern California Edison, San Clemente, California** – Mr. Scott was the construction manager for preparing the San Onofre Nuclear Generating Station (SONGs) facility for the "Cold, Dark, and Stable" phase. He was on-site during site walks and evaluations, and oversaw the development of: scopes of work, D&D preparatory documents, cut and cap locations, equipment repowering, and the D&D request for proposal (RFP) to contractors. Mr. Scott assisted with developing the overall schedule, sequencing of work activities and cost estimates. He prepared bid packages and supervised the installation of a 12 kV ring bus to provide power to the demolition contractors and for systems needing to remain for continuous cooling of the spent fuel pools and security systems. Mr. Scott was also responsible for reducing the ring bus schedule by 120 days by implementing a non-invasive "Hydro-Vac" method of hole excavation for over 50 utility poles rather than the conventional utility mechanical method of using an auger.

**Site Construction Manager, Dry Sorbent Injection (DSI) System Project at Boardman Coal-Fired Power Station, Portland General Electric Company, Boardman, Oregon** – Site Construction Manager for the installation of a DSI at Boardman Coal-Fired Power Station, a 640 MW (gross) coal-fired power plant. The DSI system now controls sulfur dioxide emissions via Trona reagent. It included rail/truck unloading, storage silos, air compressors, blowers with dehumidification equipment, chillers and heat exchangers to supply dry air to transport the Trona via mills to the station ductwork. In addition to supplying and installing the DSI equipment, the project designed, supplied, and installed the balance of plant electrical, controls, civil/structural and mechanical equipment and bulk materials for a complete DSI system.

**Site Manager, Sandow 5 Owner's Engineer Project, Texas Utilities Corporation, Texas** – Site Manager for construction of Sandow Unit 5, a 581 MW coal-fired plant in Texas. Work included separation and relocating and/or repowering of common systems allowing continuous operation of Units 4 and 5 during and after D&D of Units 1, 2 and 3. After common facilities were repowered, Units 1, 2, and 3 were taken to cold and dark and common piping systems were cut and capped.

**Project Director and Site Manager, Cordova Energy Center, Cordova, Illinois** - Mr. Scott was the Project Director and Site Manager on a 537 MW combined cycle unit at the Cordova Energy Center. The plant achieved commercial operation on schedule and within budget. Responsibilities included selection of and monitoring the EPC contractor on engineering, construction and startup matters; monitored all Power Island vendors; constructed two 345 kV interconnections/switchyards, supply gas and plant discharge pipelines and the plant discharge facility; supported the permitting process; implementation of an Enterprise Zone; reported progress and interfaced with the Independent/Banker's engineer and the Power Purchaser and managed the Owner's Engineer.



## CHARLES M. BURSICH JR

### PROJECT MANAGER, SENIOR PROJECT ENGINEER

#### PROFESSIONAL QUALIFICATIONS

Mr. Bursich has more than 30 years of experience in construction management, engineering, D&D, environmental regulatory compliance, environmental remediation, site restoration, and safety and health. Mr. Bursich has worked extensively in the construction and demolition industry providing construction management, contract management, safety and health management, procurement, multi-media environmental compliance program development, project oversight, and quality control for various industrial operating sectors, heavy construction, and environmental remediation projects throughout the world.

Mr. Bursich has broad knowledge in power plant construction, commissioning, and D&D. Mr. Bursich served as Environmental Director for 16 active fossil power projects, nuclear power projects, and oil and gas projects under the Engineering and Construction Business Unit globally and Construction Manager during construction of two AP1000 Nuclear Reactors (Vogtle Units 3 and 4) as well as many other heavy industrial construction and demolition projects.

In addition, Mr. Bursich has extensive project management experience in performing and executing Hazardous, Toxic, and Radioactive Waste (HTRW) cost reimbursable, fixed price, and turnkey projects and has dealt with a broad spectrum of contaminants on various projects, including unexploded ordnance, solvents, metals, pesticides, polychlorinated biphenyls (PCBs), asbestos, lead-based paints, and radioactive materials.

Regarded as an industry expert, Mr. Bursich has been invited to provide specialized training to many private and government sectors including U.S. Environmental Protection Agency (EPA) Regions V and VIII, U.S. Department of Defense (DOD), U.S. Technical Center for Explosive Safety, U.S. Department of Defense Explosive Safety Board, Arkansas Department of Environmental Quality, Wisconsin Department of Natural Resources, as well as many private organizations within the industry.

#### RELEVANT EXPERIENCE

**Senior Project Engineer, SJRPP D&D Project, JEA, Jacksonville, Florida** – Mr. Bursich provided engineering support services required for the D&D of the SJRPP, a large electric generating plant featuring two 632 MW coal-fired power units. The APTIM team operates as the Owner's Engineer providing professional services including, but not limited to; construction and environmental permitting, site assessments and feasibility studies, regulated materials management, storm water management and oversight, decommissioning scope development

#### EDUCATION

- ▶ Bachelor of Science, Civil Engineering, University of Colorado at Denver, Denver, CO
- ▶ Associate of Specialized Technology, Architectural Computer Aided Drafting & Design Technology, Pittsburgh Technical Institute, Pittsburgh, PA

#### REGISTRATIONS/CERTIFICATIONS

- ▶ Registered Environmental Manager (REM)
- ▶ Water Operator Class III
- ▶ Level 1B Certified Storm Water Inspector
- ▶ Stormwater Management Inspector

and implementation, demolition planning and oversight, and overall project management.

**Environmental Director, Engineering and Construction Business Unit, Charlotte, North Carolina** – Mr. Bursich maintained responsibility for environmental programs and corporate compliance oversight for 16 active fossil power projects, nuclear power projects, and oil and gas projects under the E&C Business Unit globally. He was responsible for the development, implementation, and sustainability of environmental strategies, policies, procedures, and overall programs to maintain strict compliance with corporate vision and environmental law.

**Environmental Program Manager, Vogtle Units 3 & 4 Construction Project, Waynesboro, Georgia** – Mr. Bursich was responsible for the development, implementation, and management of the multimedia environmental compliance program during the construction of two AP1000 Nuclear Reactors (Vogtle Units 3 & 4). He was directly responsible for permitting and overseeing the execution of environmental permitted conditions for 15 regulatory permits, acted as the liaison between project management, client personnel, and regulating authorities for all issues associated with environmental compliance, emergency preparedness and response, and fire protection facilities. As Program Manager, he maintained responsibilities for the management, execution, and support for all project initiatives.

**EH&S Program Manager, John W. Turk, Jr. Power Plant Project, Fulton, Arkansas** – Developed, implemented, and managed the EH&S Program to include a multi-media Environmental Program for the construction, commissioning, and start-up phases of a 600 MW ultra-supercritical coal-fired power plant. Provided leadership and direction in overseeing the performance of 13 regulatory permits and all environmental project business across diverse functional areas including client liaison, project management, engineering, procurement, subcontracts, and overall construction. Managed the EH&S Program for over 1,600 on-site employees while maintaining expense budgets and full accountability for attainment of EH&S goals.

**Project Manager, USACE Total Environmental Restoration Contract, Centennial, Colorado** – Mr. Bursich had direct responsible charge for developing, supervising, and approving remedial designs, specifications, contract drawings, project procurement activities, regulatory permitting, and permit conformance on various government projects contracted with the U.S. Army Corps of Engineers under the Omaha District, Total Environmental Restoration Contract. Mr. Bursich was responsible for budgeting and scheduling staff, meeting contractual requirements, formulating work plan supplements, managing internal and client expenditures, reporting on progress and problems, and presenting viable solutions. Additional responsibilities included ensuring proper implementation of project EH&S programs, reporting, record keeping, and active board membership of the Regional Safety Counsel. Mr. Bursich successfully developed and negotiated U.S. Department of Defense, U.S. Technical Center for Explosive Safety, and U.S. Department of Defense Explosive Safety Board policy revisions to accommodate innovative and effective demolition and disposal techniques of Army facility buildings contaminated with unexploded ordnance. The project paved the way for the demolition of hundreds of buildings on a 3,400-acre plant allowing the transfer of land to the Wisconsin Department of Natural Resources that utilized the site's prairies and oak forests for a nature preserve and public recreation areas.

## STEVEN PETTY, PG PROJECT MANAGER, ENGINEERING COST ESTIMATOR

### PROFESSIONAL QUALIFICATIONS

Steven Petty has proven technical expertise in program management, project management, proposal management, computer applications, technical writing, subsurface fluid migration, subsurface mapping, stratigraphic analyses, well monitoring, and borehole installation and geophysics. His environmental experience includes working with commercial, federal and state regulators in indefinite delivery/indefinite quantity (ID/IQ) contracts, commercial lump sum contracts, site evaluations, planning remedial programs, and optimizing operational schedules. Mr. Petty has served as Design Manager for a \$2.5 million polychlorinated biphenyl (PCB) river-dredging project involving filter pressing operations, water treatment and waterborne boulder removal operations.

Mr. Petty has extensive experience supervising multi-disciplined personnel, including service and contract consultants. He has coordinated numerous teams of geologists and civil and chemical engineers. He also has over four years of experience as the U.S. Environmental Protection Agency (USEPA) Region III Program Manager and Point-of-Contact for the Emergency and Rapid Response Services (ERRS) Region III Contract with APTIM legacy firm OHM/IT. Mr. Petty is a licensed Professional Geologist in good standing in the states of Florida New York and Pennsylvania. Mr. Petty also serves as a technical lead and engineering cost estimator for a various number of demolition projects involving power plants and warehouses throughout the country.

### RELEVANT EXPERIENCE

**Lead Estimator and Cost Scheduler, Cholla Unit 4 Decommissioning Valuation Project, Arizona Public Service (APS), Joseph City, Arizona** – Mr. Petty was the Lead Estimator and Cost Scheduler for the technical effort to evaluate and price the costs to decommission and surgically dismantle Unit 4 and associated assets without disturbing the on-going operation of Units 1, 2, and 3 at Cholla. The evaluation consisted of the costs and engineering effort to separate Unit 4 from the adjacent three units including all shared support structures and the demolition of Unit 4 as part of a negotiated settlement with co-owner PG&E. The rough order of magnitude (ROM) cost study also included costs associated with the closure of Cholla Lake, the coal pile and the ash ponds in addition to any potential future subsurface remediation costs. The project also required pricing for a remedial system and well abandonments for the project. Costs for future monitoring were also forecasted.

**Scope, Grayson Power Plant, Glendale, California** – Mr. Petty provided preliminary consulting and a cursory valuation of the petroleum-fired Grayson Plant located in Grayson, California, a suburb of Los Angeles. The 5-unit facility has one unit that will remain active while the remainder of the site is decommissioned and demolished to accommodate the installation of natural gas generation station that will serve the electrical needs of the northern Los Angeles areas. Mr. Petty also advised the consultants from Stantec Consulting on the requirements for the drawing and specification package.

#### EDUCATION

- ▶ Master of Science, Geology, Florida State University
- ▶ Bachelor of Science, Geology, Florida State University

#### REGISTRATIONS/CERTIFICATIONS

- ▶ Professional Geologist

**Technical Lead, Dismantlement of the GE Part and Repair Warehouse, Northern Bergen County, New Jersey** – Mr. Petty provided all demolition estimating for the dismantlement of the GE Repair facility in Northern Bergen County near Jersey City, New Jersey. The facility was being considered for sale contingent upon the finalization of the environmental cleanup of the site and the consequent razing of the facility. GE required this critical information in order to assess the economic viability of the project given that the parcel was to be developed for mixed residential and commercial use upon completion for the work. The advancement of the project is still in consideration and in progress.

**Project Manager, Brandywine Ash Landfill Capping Project, NRG Energy Brandywine, Maryland** – The project was one of three ash landfill capping projects awarded to APTIM by NRG and involved the preparation of subgrade, installation of storm water drainage features, installation and maintenance of erosion and sediment controls, in addition to capping the entire 96-acre landfill. Mr. Petty performed all initial activities including site and infrastructure setup for the two year-long project. Those activities included the hiring of labor for the project and submission of all material specifications and plans for the work. There were many constraints imposed by NRG that were followed in order to satisfy the many concerns from the surrounding community. Mr. Petty performed the project for the majority of the first year. In the first year, four major cells were cleared and installed with drainage features thereby readied for geomembrane installation and eventual vegetative soil cover material.

**Technical Lead, AEP Kammer Generating Station Valuation, Global One Transport Corporation, Moundsville, West Virginia** – The project was performed for railroad transport Company Global One Transport (GOT) out of Houston, Texas. GOT was actively seeking strategic locations for coal fired power plant properties along the Ohio River for their railroad transportation business. Mr. Petty was part of the project team to develop the economic asset valuation of the plant property in order to allow GOT to tender a purchase offer to AEP, the owner of the Generating station. The decision rested heavily on the valuation study and the potential re-design of the facility to accommodate the railroad companies future needs. Aspects of re-permitting the storm water system, water circulation system and assessment of environmental impacts that would fall upon GOT if they purchase the assets weighed heavily on their decision to proceed with the purchase.

**Technical Lead and Site Engineer, Trenton High School, New Jersey Schools Development Authority, Trenton, New Jersey** – APTIM was selected to evaluate the potential value and costs for the dismantlement of the Trenton High School structure. The project was highly visible to the local community due to the historic value of the assets and the dangers related to the amount of asbestos in the structure. The school was constructed in the early 1920s and had many subsurface raceways requiring abatement and removal. The school structure itself had a large asbestos abatement component in the form of insulation, floor and mastic roof materials, and ceiling tiles. Mr. Petty performed the bid and valuation to dismantle the structure and the engineering estimate was within 0.5% of the actual cost for the project. Mr. Petty also served as Geotechnical Engineer for the project during dismantlement of the building.

## GREG DEVER, PE, CPESC SENIOR PROJECT MANAGER

### PROFESSIONAL QUALIFICATIONS

Greg Dever has experience with engineering design and project management for environmental assessment and remediation projects. He has participated in assessment activities, engineering design, remedial action system operation oversight, and overall project management for numerous petroleum-contamination and hazardous waste sites as well as for commercial and public works projects. Mr. Dever has completed numerous system installations and remedial design reports and developed his expertise in environmental construction techniques.

Mr. Dever has performed as Project Engineer, Project Manager, Contract Manager for multiple Florida Department of Transportation (FDOT) districts with scopes of work including Phase I and Phase II Environmental Site Assessments (ESAs), remedial investigation, remedial design, and remedial action. He has managed contracts of \$3 to \$15 million and acted as technical advisor for many programs across the country. He has managed three consecutive 8-year contracts with FDOT 2, a testimony to the high degree of satisfaction felt by this sizable District.

### RELEVANT EXPERIENCE

#### Project Manager; US 301 Bypass-Southern Wood Piedmont Dioxin Site, Baldwin, Florida -

Mr. Dever prepared plans and managed the project execution of dioxin-impacted soil removal from a 19-acre parcel within the FDOT US 301 Bypass right-of-way. All 19 acres were within forested wetlands and required resourceful planning to manage the surface water inflow from a 2-square mile upland drainage basin. The project required preparation and implementation of SWPPPs and SPCCs, permitting with the FDEP hazardous waste section, removal, management, and disposal of 30,000 cubic yds of RCRA regulated wastes.

**Environmental Assessment of District Lands, St. Johns River Water Management District, Palatka, Florida –** Mr. Dever managed numerous projects involving Phase I and Phase II environmental assessments of former agricultural properties for acquisition by the District for habitat restoration and/or stormwater treatment areas. Phase I sites ranged in size from 20 acres to 3,200 acres with various recognized environmental conditions.

**Area A Remediation Work Plan US 301 Bypass, FDOT, District 2, Baldwin, Florida –** Mr. Dever provided management and technical oversight for preparation of a remedial work plan to excavate 31,000 cubic yards of dioxin-contaminated soil. Approximately 19 acres of

#### EDUCATION

- ▶ Bachelor Science, Civil Engineering, University of Arizona, Tucson, Arizona

#### REGISTRATIONS/CERTIFICATIONS

- ▶ Professional Engineer, Civil
- ▶ Certified Professional in Erosion and Sediment Control
- ▶ OSHA Construction Standard for Lead Training, 29 CFR 1926.62
- ▶ FDOT Traffic Safety in the Work Area Course
- ▶ FDOT Mod II-B Training
- ▶ FDOT Training, Contract Administration and Management Practices
- ▶ FDOT Traffic Noise Analysis

the FDOT right-of-way for a new highway bypass became contaminated from historic stormwater runoff from an adjacent former wood treating facility. The impacted area was all wetlands covered with a thick forest of pine, cypress, and oak trees and heavy underbrush. The work plan included site control, establishment of exclusion and contamination reduction zones, site planning for harvesting of the trees, excavation planning, truck routing, decontamination procedures, stormwater runoff control, preparation of a SWPPP and SPCC plan and re-routing of a creek that bisected the right-of-way.

#### Diesel Generator Fuel Tank Removal, Assessment, Design, and Remediation, Former Hart Expressway Toll Facility, FDOT, District 2, Jacksonville, Florida –

Mr. Dever provided management and technical oversight for site assessment and remediation of diesel fuel contamination resulting from a leaking diesel generator underground fuel storage tank at a former toll facility on the Hart Expressway in Jacksonville, Florida. Site assessment included installation of 14 soil borings and 9 monitor wells in accordance with Florida Department of Environmental Protection (FDEP) Chapter 62-780 Contaminated Site Cleanup Criteria. The data collected was assimilated into a Site Assessment Report and submitted to the City of Jacksonville Environmental Quality Division, which was approved. The site assessment was followed by a feasibility review to select the most economical technology while meeting the FDOT's goal of a rapid cleanup. The selected option included source removal combined with application of Klozur CR, a single formulated product of activated persulfate and an oxygen release compound into the backfill soil. The Remedial Action Plan was prepared and submitted to the City of Jacksonville Environmental Quality Division, which was approved.

#### Senior Project Manager and Lead Engineer, JEA SJRPP Demolition, Jacksonville, Florida -

Mr. Dever is a member of the design team and Owner's Engineer to evaluate the site and prepare the bid and project specifications to decommission and demolish the existing 325-acre, 1,300 MW power plant site. Scope included environmental evaluation, hazardous waste accumulation and disposal, bulk petroleum and chemical storage tank management, cleanout, and contents disposal, universal waste management, accumulation and disposal; site stormwater management design oversight and site certification amendment permitting with FDEP, ash and byproduct storage management, process ponds closure management, demolition contractor management and oversight.

#### I-10 and I-95 Interchange, (Parcels 120, 121, 145, 148, 173, 177, 178A and 178B) FDOT, District 2 Jacksonville, Florida –

Mr. Dever provided management and design and construction oversight for accelerated remedial design and cleanup at eight sites that were contaminated with chlorinated solvents and/or petroleum hydrocarbons. Designed and implemented remedial strategy, oversaw construction, designed and implemented Maintenance of Traffic (MOT) plan that closed numerous local streets, managed ex-situ remediation of the contaminated soil (25,000 tons) at five of the eight sites (Parcels 120, 121, 148, 177, and 178A) using potassium permanganate to treat 1,1,1-TCA, tetrachloroethene, their associated daughter products, and petroleum hydrocarbons. Managed groundwater removal and treatment with air stripping and carbon polishing. Directed remaining groundwater contamination cleanup at Parcel 120 using peroxide injection. Managed Parcels 173 and 177 cleanup using excavation and off-site disposal due to impacts from ash contamination. All eight sites received Site Rehabilitation Completion Orders.

**SR 329 (Main Street), FDOT, District 2, Gainesville, Florida –** Mr. Dever provided management and construction oversight for groundwater treatment and disposal of petroleum-contaminated soil during storm drain construction for ½-mile urban segment. Recovered and disposed of contaminated drill shaft cuttings during mast arm installation. Removed UST from within right-of-way identified during APTIM's Level 2 assessment.

## ANDREW SCHAAF, EIT, PMP PROJECT MANAGER, MECHANICAL ENGINEER

### PROFESSIONAL QUALIFICATIONS

Andrew Schaaf has 19 years of experience with engineering, construction, commissioning, maintenance and decommissioning projects primarily within the power industry. His power experience covers over 20 plants/stations and encompasses a range of involvement through the life of a project. His experience in the industry comes from multiple viewpoints including those of architect engineers, contractors, owners and consultants.

#### EDUCATION

- ▶ Bachelor of Engineering, Mechanical, Colorado School of Mines, Golden, Colorado

#### REGISTRATIONS/CERTIFICATIONS

- ▶ Engineer in Training, Mechanical
- ▶ Certified Project Management Professional, Project Management Institute

### RELEVANT EXPERIENCE

**Project Manager/Technical Lead for Decommissioning Management for SJRPP, JEA, Jacksonville, Florida – Mr. Schaaf** was the project manager, as well as technical lead that provided engineering services for the decommissioning management for JEA's SJRPP. Developed the demolition specification required for a complex decommissioning scope of work, which included a coal terminal and 3.2 miles of conveyor with waterway, wetlands, and a state highway crossing. Managed the initial shutdown; removal of universal waste; and cleaning of the boiler, precipitators, scrubbers, and ash handling system. He developed and designed the electrical and mechanical isolation and system reroute of critical systems so they would remain operational throughout the demolition process. Managed the systematic turnover of zones, which were cold, dark and free of universal and hazardous waste, to the demolition contractor to allow the commencement of demolition of the facility. Services include developing design criteria for future solicitations, supporting future solicitation evaluations, and engineering future decommissioning, demolition, remediation, and final site restoration. He implemented the use of PROCORE as the central project management software for the project, which includes the management and tracking of submittals, action items, requests for information (RFIs), transmittals, inspections, incidents, punch list items and a daily log for the project.

**Lead Engineer, Cholla Unit 4 Decommissioning Valuation Project, Arizona Public Service (APS), Joseph City, Arizona – Mr. Schaaf** was the Lead Engineer for the technical effort to evaluate and price the costs to decommission and surgically dismantle Unit 4 and associated assets without disturbing the on-going operation of Units 1, 2, and 3 at Cholla. The evaluation consisted of the costs and engineering effort to separate Unit 4 from the adjacent three units including all shared support structures and the demolition of Unit 4 as part of a negotiated settlement with co-owner PG&E. The rough order of magnitude cost study also included costs associated with the closure of Cholla Lake, the coal pile, and the ash ponds in addition to any potential future subsurface remediation costs.

**Project Manager/Lead Engineer, Four Corners Generating Station, Units 1, 2, and 3 Decommissioning Project, Arizona Public Service (APS), Farmington, New Mexico – As Project manager, Mr. Schaaf** was the key member of the decommissioning team who coordinated with the operations team of the remaining units to ensure there were no disruptions of generation throughout the project. He oversaw the complex ACM abatement of the structures to be demolished, systematic deconstruction and demolition of a boiler adjacent active condensate storage tank as well as other critical support systems. During implementation, he oversaw the construction of five major projects, which occurred concurrently to allow for the demolition of the three units. They were a control system reroute project, installation of a new electrical system from a 4160V switchgear through five motor control centers and out to operating equipment, a new compressed air system, a new raw water pump system and rerouting of condensate, potable water

and fire water systems. Throughout the demotion, there were several minor projects, which had a direct risk to the fuel supply of the operating units, and occurred with no impacts to generation. As Lead Engineer, developed system work packages, which included on-site system analysis and inspection of each unit to understand the layout of the systems and the required steps for decommissioning. The work packages provided details for the removal of major equipment, piping, and support systems and details for the sale of operable equipment and salvage materials for scrap. Performed an engineering assessment, which detailed plant wide systems and the required steps to segregate these systems for long-term use by the remaining two units with a net capacity of 1600 MW. The assessment also provided details for a cut and cap program to isolate the units that APS wanted to decommission. It also identified capital projects required at the plant to maintain critical systems powered, controlled and operated by the units being removed.

**Project Manager and Technical Lead, Reid Gardner Station Decommissioning, NV Energy, Moapa, Nevada – Mr. Schaaf** developed the project life cycle phasing schedule, which included the phased shutdown and decommissioning of a four-unit 800MW generating station. Completed an environmental assessment on abatement, sequence of operations for shutdown, and planning effort for shutdown and post shutdown activities. Provided guidance to client for high value asset recovery based on current market needs and schedule. Developed a detailed engineering analysis of common mechanical and electrical systems to determine impacts when units are shutdown. Created over 120 work plans for the shutdown, and decommissioning of systems, which was required to engage remaining NV Energy employees during the initial phases of the decommissioning process. Developed a detailed engineering package for the reroute of the electrical system to critical equipment required for operation post demolition. Provided technical support and on-site review of the demolition contractors execution plans and supports the project's construction manager to ensure the project is on schedule and meets all environmental compliance requirements. He implemented the use of PROCORE as the central project management software for the project, which includes the management and tracking of submittals, action items, requests for information (RFIs), transmittals, inspections, incidents, punch list items and a daily log for the project.

**Project Engineer, Gerald Gentlemen Station, Nebraska Public Power District, Sutherland, Nebraska – Mr. Schaaf** served as Project Engineer with Nebraska Public Power District at the coal-fired Gerald Gentlemen Station. The plant consists of two units with a total net of over 1400 MW net and is located in Lincoln County near Sutherland, Nebraska. Each unit consists of a subcritical steam generator powering a single reheat steam turbine-generator with a pulse jet baghouse. The plant has been in commercial operation since 1979 and burns Powder River Basin coal. At Gerald Gentlemen Station modified the control system of the soot blowing air compressors to integrate it into the distributed control system, modified steam piping, conducted a retrofit of low pressure turbines to increase plant efficiency, conducted overhauls on maintenance of the main steam turbines, overhauling the boiler feed pumps and boiler feed pump turbines. Worked on modifying the coal handling system, coal storage, dust suppression and collection in the coal handling areas. His work on environmental and emissions related projects involve emissions testing, carbon injection for mercury capture, selective non-catalytic reduction assessment for NOx reduction and work on the once through cooling system.

**Nebraska Public Power District, Columbus, Nebraska – At Nebraska Public Power District, Mr. Schaaf** worked at several of the company's generating stations doing various projects. He has conducted system walk downs and drawing verification for a plant, which had been purchased. He worked on main steam turbine overhauls at two of their other fossil fuel power plants, which included removal of the main steam turbine for inspection, inspection of major valves, cleaning and treatment of the lube oil system as well as piping inspections.

## MICHAEL VOLLO PROJECT MANAGER, ASBESTOS INSPECTOR

### PROFESSIONAL QUALIFICATIONS

Michael Vollo has over 30 years of diverse experience involving the management of projects requiring asbestos health and safety oversight, air quality support for mold and other parameters, industrial pre-demolition assessment, meteorological studies, air permitting, emergency response remediation, asbestos and lead-based paint consulting services and indoor air quality assessments for OSHA compliance. Mr. Vollo has managed more than \$400 million of environmental projects for both government and commercial clients.

Mr. Vollo also has extensive experience and certifications in asbestos and mold relative projects and is considered APTIM's Lead Technical Expert for asbestos and mold consulting projects. He has completed asbestos and lead surveys not only in the United States, but also in Puerto Rico and Italy. Experience includes project management of asbestos abatement project, specification design, asbestos investigation, bulk and air sampling and the development of operation and maintenance (O&M) costs and plans. Mr. Vollo's experiences for mold include assessments, remediation design, development of remediation clearance criteria and mold remediation oversight.

### RELEVANT EXPERIENCE

**Technical Lead and Project Manager, Pre-Demolition Indicative Cost Estimates, Numerous Coal and Oil-Fired Power Plants, Multiple Locations, Nationwide** – Mr. Vollo has been the technical lead and project manager for the development of pre-demolition cost estimates for numerous nation-wide power plants. The work included mobilizing and supervising a field survey team to perform facility-wide surveys for ferrous and non-ferrous steel, asbestos, and universal waste. Once all data was received, Mr. Vollo developed a demolition and abatement cost estimate that included recycling of all steel, cost to provide demolition construction management, asbestos abatement cost estimate, cost for industrial hygiene sampling, and cost for the removal and disposal/recycling of universal waste. This scope of work was developed and implemented for the following facilities: Arizona Public Service Four Corners 2,300 MW Coal-Fired Generating Station, Fruitland, New Mexico; Exelon Oil-Fired Cromby Generating Station, Montgomery County, Pennsylvania; Exelon New Boston Generating Station, South Boston, Massachusetts; Exelon Delaware Generating Station, Philadelphia, Pennsylvania; PEPCO Benning Road Generating Station, Washington, DC; and, Former U.S. Ramey Air Force Base in Aguadilla, Puerto Rico. APTIM completed the decommissioning of the APS Four Corners Power Plant.

#### EDUCATION

- ▶ Master of Arts, Environmental Management, Montclair State University, Upper Montclair, New Jersey
- ▶ Bachelor of Arts, Meteorology, Kean University of New Jersey, Union, New Jersey

#### REGISTRATIONS/CERTIFICATIONS

- ▶ Certified Indoor Air Quality Investigator
- ▶ Licensed Mold Assessor
- ▶ Emergency Response Technician
- ▶ EPA Removal Cost Management System (RCMS) Certified
- ▶ Certified AHERA Project Designer
- ▶ Certified AHERA Building Inspector
- ▶ Registered Environmental Assessor
- ▶ Certified NITON XL Lead-in-Paint Certified

**Environmental Compliance and Assessment Lead, Cholla Unit 4 Decommissioning Valuation Project, Arizona Public Service (APS), Joseph City, Arizona** – Environmental Compliance and Assessment Lead for the technical effort to evaluate and price the costs to decommission and surgically dismantle Unit 4 and associated assets without disturbing the on-going operation of Units 1, 2, and 3 at Cholla. Mr. Vollo led a team of three inspectors to perform the pre-demolition environmental evaluation for the Cholla Unit 4 separation which included the collection and analysis of over 460 samples for asbestos and the inventory of universal wastes. These costs were included in the schedule and estimate valuation for the effort to separate Unit 4 from the adjacent three units including all shared support structures and the later demolition of Unit 4 as part of a negotiated settlement with co-owner PG&E.

**Client Consultant Manager, Environmental and Engineering Consulting Services Indefinite Quantity Task Order Contract, New Jersey's School Development Authority (NJSDA), Trenton, New Jersey** – This 3-year, \$3 million contract is APTIM's second consecutive contract with NJSDA with Mr. Vollo as the Consultant Client Manager. To date, APTIM has assisted on one of the largest projects ever managed by NJSDA, the demolition and reconstruction of Trenton Central High School. This multi-discipline project, included the following tasks: boundary and topographic surveys; utility surveys; hazardous materials surveys; building remediation and demolition cost estimates; demolition oversight and demolition debris inspections; sampling for disposal and hazardous materials prior to demolition; structural assessments; storm water design and permitting; soil and ground water sampling and New Jersey Licensed Site Remediation Professional (LSRP) remediation services; historical and archaeological studies/surveys; geophysical and geotechnical surveys; demolition bid specification; grading plans, electrical load plans, and bid documents for the design/build phase of the project; regulatory review of documents; bid assistance; construction management services; asbestos abatement air monitoring and oversight; asbestos abatement bid document and specification; groundwater modeling; traffic study; meetings with local utilities to assist in the pre-design package; back fill sampling, Proctor sampling and compaction oversight for a Nuclear Density Testing; and perimeter fence line monitoring.

**Technical Lead and Manager, Nationwide Asbestos Surveys, Trinity Industries, Nationwide** – Mr. Vollo was the Technical Lead and Manager for the completion of facility-wide asbestos surveys for 57 Trinity Industries plants nationwide. Mr. Vollo prepared the scope of work, subcontract agreements, budget, schedule of inspectors, logistics, preparation of final reports, and direct correspondence with the client. The surveys were performed at large industrial sites that manufacture rail cars, rail maintenance, roadway barriers, cryogenic vessels, wind turbine towers, and cement facilities. Mr. Vollo was required to know the licensing and regulatory requirements in 23 different states. Mr. Vollo had to be aware of the license and training requirements to perform asbestos surveys. Mr. Vollo managed nine different asbestos building inspectors located in five different states.

**Program Manager, Emergency Management Asbestos Remediation Contract (EMARC), U.S. Army Corps of Engineers (USACE), Washington, DC** – This was a construction management contract for demolition, ACM, and lead-based paint consulting services. The geographic coverage of the contract ranged from Virginia to Maine. Mr. Vollo was the key asbestos technical consultant for the DC Public Schools system asbestos remediation contract. Mr. Vollo was responsible for staffing of office and field crew, contracts responsibilities, budgets/proposals, and overall quality of work. In one of its last projects, APTIM removed ACM and restored insulation in underground steam tunnels that support the U.S. Capitol and other federal buildings in Washington, DC.

## AMY MARTINEZ, CHMM

### PROJECT MANAGER, PERMITTING AND COMPLIANCE

#### PROFESSIONAL QUALIFICATIONS

Amy Martinez is a trained Certified Hazardous Materials Manager (CHMM) with 14 years of environmental compliance experience in conducting environmental regulatory compliance audits, assisting clients in storm water management, hazardous materials management, hazardous waste management and regulatory permitting. In addition, Ms. Martinez has extensive experience supporting clients in the development and implementation of storm water, solid waste, hazardous materials, and hazardous waste compliance and auditing programs in California. Ms. Martinez has experience supporting clients in various industries as well as government institutions, including: Department of Defense (e.g. Army, Air Force, Marine Corps, Navy) facilities, Federal Emergency Management Agency (FEMA), general manufacturing and warehousing, scrap metal, appliance and electronics recycling facilities, telecommunications, solid waste landfills, retail establishments, utilities, and aerospace.

Ms. Martinez is responsible for assisting clients in assuring compliance with all federal, state, and local procedures and company-specific practices that govern hazardous waste management, hazardous materials management and tracking. In addition, Ms. Martinez also has expertise in California Hazardous Materials Business Plans (HMBPs), interacting with the California Unified Program Agencies (CUPAs) on behalf of clients, developing and executing waste characterization audits, and overseeing waste transportation and disposal services.

#### RELEVANT EXPERIENCE

**Project Manager, Southern California Edison (SCE) Tehachapi Renewable Transmission (TRTP) Project, Southern California** – Responsible for project management, oversight and execution of construction storm water management on the TRTP Project, a linear utility construction project in Southern California. Ms. Martinez oversaw the development, implementation, and closeout of construction storm water pollution prevention plans (SWPPPs), which included the development and certification of SWPPPs, inspections and reporting, rain event monitoring, SWPPP amendments, closeout, and reporting. Ms. Martinez was responsible for managing the entire project team of more than a dozen Qualified SWPPP Developers and Practitioners (QSD/Ps) and ensured that all SCE processes and procedures were being adhered to and the team followed SCE standards and protocols. Ms. Martinez oversaw administrative responsibilities including ensuring project metrics were being met or exceeded, managing project budgets, assessing staffing and other resource needs, and maintaining an emphasizing the “team” approach to project execution. Additionally, Ms. Martinez was responsible for spearheading the development of a Program Management Quality Control Plan to describe, define, and provide guidance for all work performed by APTIM on the TRTP Project.

#### EDUCATION

- ▶ Master of Arts, Environmental Resource Policy, George Washington University, Washington, DC
- ▶ Bachelor of Arts, Environmental Studies and Economics, Dickinson College, Carlisle, Pennsylvania

#### REGISTRATIONS/CERTIFICATIONS

- ▶ Certified Hazardous Materials Manager (CHMM)

#### Project Manager, In-Sink Food Waste Disposal Pilot Program, LA Sanitation, Los Angeles, California

Ms. Martinez managed a team responsible for designing and conducting a pilot-scale program for the City of Los Angeles, Bureau of Sanitation (LASAN) to study the impact residential food scrap loading could have on the sewer system and the wastewater treatment process at the Hyperion Water Reclamation Plant (HWRP). Ms. Martinez oversaw work performed on nine unique project tasks by six sub-consultants and numerous APTIM staff. Ms. Martinez is responsible for the technical execution of the project scope, maintaining the project schedule, tracking expenditures, evaluating risk, communicating with the client, and preparing project invoices.

**Project Manager, EPCRA Tier II Site Survey and Reporting Project, AT&T Services, Nationwide** – Ms. Martinez managed an Emergency Planning and Community Right to Know Act (EPCRA) Tier II site survey project for approximately 1,200 facilities as well as the completion of 75 Spill Prevention, Control and Countermeasure (SPCC) plans for AT&T throughout the nation. Ms. Martinez has led and trained a team of 12 full-time field inspectors on how to perform the Tier II site surveys, detailing fuel tank and generator information as well as the presence of hazardous materials, including sulfuric acid, diesel fuel, propane, hydrofluorocarbons and other potentially reportable hazardous materials. Ms. Martinez was responsible for the successful delivery of high quality work products on schedule. Ms. Martinez managed the overall project scope, schedule, and budget and met frequently with the client manager to ensure open communication and immediate attention to the client’s program needs. APTIM performed the project on-time and on budget in accordance with the executed agreement.

**Project Manager, California Regulatory Inspection Project, AT&T Services, Nationwide** – Ms. Martinez coordinated staff and resources to facilitate approximately 1,000 regulatory site inspections for AT&T sites located throughout the state of California. She prepares site inspection documents for regulatory inspectors. She provides regulatory compliance assistance on hazardous materials and waste issues. Ms. Martinez documents inspections and corrective action process through an AT&T internal database. She also performs daily coordination with client on compliance related issues for approximately 3,500 sites statewide.

**Project Manager, Confidential Retail Client, Waste Characterization Audits, Multiple Locations, California** – Ms. Martinez has served as Project Manager for more than a dozen commercial retailers to develop and execute waste characterization audits throughout the state of California. Ms. Martinez has facilitated the scheduling and coordinating of waste audits at back-of-store, distribution centers, transfer stations and landfills throughout California. The objectives of the waste audits is to evaluate solid waste management and disposal practices, evaluate waste audit data, and provide recommendations to clients on process improvements that may lead to increased solid waste diversion and improved hazardous and universal waste management. Ms. Martinez has worked with the APTIM Program Information Management (PIM) team to develop a waste audit collection tool to collect and analyze data more accurately in the field. The mobile field application has been applied to hundreds of waste audits and has greatly improved data collection, reduced margin of error, and improved reporting time. Ms. Martinez is responsible for the overall safety of the project teams serving in the field to ensure compliance with APTIM’s stringent health and safety policies and procedures.

## GREG MCELROY

### D&D H&S MANAGER

#### PROFESSIONAL QUALIFICATIONS

Greg McElroy is a Health and Safety (H&S) Manager for APTIM and has responsibilities for health and safety program implementation and employee safety in the Project & Plant Services Strategic Business Unit. He has over 25 years of experience in health and safety programs applied to hazardous waste, solid waste, and construction for various U.S. Department of Defense, U.S. Department of Energy, and commercial clients (7-11, Walmart, Waste Management, etc.). His duties include providing consulting services to clients and company projects for the evaluation and control of chemical, radiological, and other H&S hazards.

As H&S Manager, Mr. McElroy administers illness and injury prevention programs and provides project health and safety support for engineering and solid waste projects. He develops new division H&S programs and procedures, supervises site safety and health officers and industrial hygienists, audits job sites for compliance, writes site-specific health and safety plans, and evaluates contractors' safety records, programs, and on-site practices. Comprehensive services included hazardous waste site surveillance, industrial hygiene, safety, asbestos surveys, indoor air quality, and worker training in hazardous waste operations, welding operations, and confined spaces.

#### RELEVANT EXPERIENCE

**Health & Safety Manager, Environmental Services Business Unit, Pittsburgh, Pennsylvania** – Mr. McElroy serves as the H&S Manager in the Environmental Services business line. As H&S Manager, he administers H&S programs, develops H&S plans, and is responsible for OSHA recordkeeping. Additional responsibilities include development of new division H&S programs and procedures; supervision of site safety and health officers; job site audits for compliance, and evaluates subcontractors' safety records, programs, and on-site practices.

**H&S Manager, Northeast Region Commercial, State, and Local Business Lines, Monroeville, Pennsylvania** – Mr. McElroy served as the H&S Manager over the northeast region of the Commercial, State & Local business line. As H&S Manager, he administered H&S programs, developed H&S plans, and was responsible for OSHA recordkeeping for the two divisions. He developed new division H&S programs and procedures, supervised site safety and health officers, audited job sites for compliance, and evaluated subcontractors' safety records, programs, and on-site practices.

#### EDUCATION

- ▶ Master of Science, Environmental Science, University of Cincinnati
- ▶ Bachelor of Science, Environmental Science, Eastern Kentucky University, Richmond, Kentucky

#### CERTIFICATIONS

- ▶ BP HSSE Advisor Training
- ▶ Excavation Competent Person
- ▶ NIOSH 550 Industrial Hygiene Measurements

**Health & Safety Coordinator, Project Specific and Corporate Support, Pittsburgh, Pennsylvania** – Duties included the management of the corporate Workman's Compensation program, developed various aspects of the corporate H&S program, updated H&S procedures, served as a Health & Safety Manager for a PCB and mercury remediation project for El Paso Energy. Provided technical direction to field H&S officers, trained personnel on matters concerning safety and health, prepared proposals for new projects or business opportunities, prepared in excess of 300 site specific H&S plans and provided client/regulatory agency coordination.

**Health & Safety Officer, PSARA Technologies, Inc., Cincinnati, Ohio** – Mr. McElroy served as a site safety officer on PCB impacted soil remediation projects and conducted integrated personnel sampling at various manufacturing plants.



## ERICH BLEIWEISS SENIOR PROJECT CONTROLS

### PROFESSIONAL QUALIFICATIONS

Erich Bleiweiss is responsible for project controls and scheduling for various projects. Duties include preparation and maintenance of baseline Critical Path Method (CPM) schedules, establish and maintain a Work Breakdown Structure (WBS) to monitor actual costs against the baseline budget, rebaseline budgeted costs and schedule as required to reflect changes in scope, create and maintain Earned-Value Performance reports, and provide analysis of actual cost and progress to prepare a cost forecast for the project at completion

#### EDUCATION

- ▶ Bachelor of Arts, Cost Accounting, Franklin and Marshall, College, 1986

#### HIGHLIGHTS

- ▶ More than 30 years of experience in the cost/scheduling field
- ▶ Experience includes serving as a Senior Project Controls Engineer on numerous high-profile projects

### RELEVANT EXPERIENCE

**Cost Schedule Engineering, Aptim Environmental & Infrastructure, LLC, Trenton, New Jersey – Mr. Bleiweiss** is responsible for developing and maintaining scheduling for various projects. He performs critical path analysis through CPM, establishes and maintains WBSs to monitor project costs, as well as, Earned Value Performance reports. He assists Project Managers with computing the forecast at completion and monitors the project through Earned Value system, Cost Performance Index (CPI), and Performance Curves. He also assists project management in monthly reporting of project status to clients and weekly forecast reports to APTIM Management. Mr. Bleiweiss has served as a Cost & Schedule Engineer on the following projects:

- ▶ Avtex Fibers Superfund Site Remediation, Front Royal, Virginia
- ▶ Westland Ash Storage Site Closure Project, Dickerson, Maryland
- ▶ Ash Storage Site Closure Project, Faulkner, Maryland
- ▶ Duke Energy Sutton, Wilmington, North Carolina
- ▶ FMC, Lawrence, Kansas
- ▶ Ashland, Louisiana, Missouri
- ▶ Kane Wetlands, East Rutherford, New Jersey
- ▶ Ashland, Martha, Kentucky
- ▶ FMC, Nitro, West Virginia
- ▶ FMC, Pocatello Soil Remedial Action, Pocatello, Idaho
- ▶ FMC, Roy Hart, Middleport, New York
- ▶ FMC Middleport Demolition, Middleport, New York

- ▶ New York Air Brake, Watertown, New York
- ▶ Wyckoff Mills Wetlands, Hightstown, New Jersey
- ▶ Arco Corporation, Hastings-on-Hudson, New York
- ▶ General Electric, Saugus, Massachusetts
- ▶ Sidney Landfill, Sidney, New York
- ▶ Cortese Landfill, Narrowsburg, New York
- ▶ IFF Corporation, Union Beach, New Jersey
- ▶ Sanitary Landfill, Inc., Cinnaminson, New Jersey
- ▶ Witco Corporation Drum removal and contaminated soil excavation, Perth Amboy, New Jersey
- ▶ NRG-Bowline, Inc., Lovett CAMF Detention Pond Liner Project, Crompton & Knowles, Nutley, New Jersey
- ▶ Tullytown Resource Recovery Facility, Waste Management, Inc., Tullytown, Pennsylvania
- ▶ Cortese Landfill (NYSDEC), Narrowsburg, New York
- ▶ Confidential Client, Philadelphia, Pennsylvania
- ▶ WMX, Pottstown Landfill, Pottstown, Pennsylvania
- ▶ Duke Energy – Asheville, North Carolina
- ▶ Coronet Industries – Plant City, Florida





## BOB STOLZ PE, PG TECHNICAL ADVISOR

### PROFESSIONAL QUALIFICATIONS

Bob Stolz is a Professional Engineer and Professional Geologist with 33+ years of experience involving decommissioning and demolition, environmental remediation, civil infrastructure construction, facility closure, and site restoration. His roles have included Construction Quality Control Manager on both government and commercial contracts. Primary responsibilities have also included design, construction supervision and oversight, engineering, and regulatory compliance. Mr. Stolz is able to draw on years of experience in facility demolition and closure, waste containment, landfill cap construction, groundwater extraction and treatment systems, hazardous waste excavation and handling, processing and disposal of waste materials infrastructure improvements, controlled earthwork, force main and piping systems, erosion control, storm water management, storm sewer rehabilitation, concrete foundations, marine construction, environmental assessments, regulatory compliance, and remedial site investigations.

#### EDUCATION

- ▶ MS, Engineering Geology, Drexel University
- ▶ BA, Geology, Rutgers College

#### REGISTRATIONS/CERTIFICATIONS

- ▶ Professional Engineer
- ▶ Professional Geologist
- ▶ USACE Construction Quality Control Manager

### RELEVANT EXPERIENCE

**Construction and Field Engineering Manager, Aptim Federal Services, LLC, Resource Management, Belcamp, Maryland** – Responsibilities include construction management, field engineering, quality control, and construction inspection for commercial and government agency projects. Primarily assigned to environmental remediation and infrastructure projects for the U.S. Department of Defense (DOD) and commercial clients. Assists with technical support, work plan production, project estimating, planning, scheduling, procurement, documentation, permits, technical support, submittals, client liaison, oversight of APTIM and subcontractor personnel, quality control, project closeout, and completion reports.

**Construction Engineering Manager, Ft Meade Closed Sanitary Landfill Cap and Drainage Repairs, Fort Meade, Maryland** – For a MAES contact task order, APTIM performed an assessment, geotechnical investigation, design, permitting, and repair of two closed sanitary landfills totaling 65 acres. Investigated final soil cover thickness, perimeter toe drain system performance, landfill slope stability, geosynthetics deployment at the cap perimeter, and performance of storm water management facilities outside the cap limits to identify any non-compliance with Code of Maryland Regulations (COMAR) for sanitary landfill closure. Investigation identified portions of the landfill that required additional soil to meet minimum cover requirements as well as segments of the toe drain and storm water management system needing improvements to reduce both subsurface and surface water retention. Our team documented deficiencies, developed remedies, prepared the design package, and obtained required permits and authorizations from the MDE for Erosion and Sediment Control, Storm water Management, Wetlands, and Solid Waste activities. Completed site

restoration activities and closed out coverage under the General Permit for Storm water Associated with Construction Activity in August 2018. Determined that area of cap slope instability was actually an area outside the landfill cap limits where geosynthetics had been installed and later exposed due to inadequate soil cover that had eroded over time. Mr. Stolz managed construction and quality control activities to implement the necessary repairs and improvements and achieve regulatory compliance. Worked closely with, MDE, USACE, and Ft Meade to develop and quickly implement cost effective solutions for changed conditions encountered during construction activities. One changed condition consisted of a drainage swale built over solid waste. APTIM exposed the solid waste during swale improvements necessitating waste removal and additional backfill activities

#### **CQC Systems Manager, DuPont Chambers Work FUSRAP Site, Deepwater, New Jersey**

- CQC Systems Manager for weekly CQC inspections of USACE-managed Formerly Utilized Sites Remedial Action Program (FUSRAP) site within the DuPont Chamberworks facility in Deepwater, NJ. Site is in safe shutdown status while awaiting resumption of remedial activities to address uranium contamination from U.S. Atomic Energy Commission activities. Inspected several excavation sites and water treatment facilities, completed CQC and Storm water Permit documentation, and performed maintenance activities. Performed detailed inspections of the entire facility on a weekly basis. Identified deficiencies and oversaw repair of malfunctioning pumps, hoses, building structures, electrical feeds, and other facilities. Completed work to the satisfaction of the USACE site manager.

#### **Field Engineering Manager, Lined Retention Pond, Duke Energy Carolinas LLC, Asheville, North Carolina**

- Mr. Stolz was responsible for pre-mobilization planning and staffing activities for the construction of a 3-acre retention pond lined with 60-mil high density polyethylene geomembrane and a 700-foot long, 24-foot high mechanically stabilized earth (MSE) wall reinforced with a soil nail system. The project requires the relocation and demolition of existing piping and electrical utilities.

#### **Project Engineer, Chemical Weapon Facility Decommissioning Study, U.S. Army**

**Chemical Research, Development, and Engineering Center, Various Locations** - Mr. Stolz provided technical and operational direction with respect to sophisticated demolition and decontamination techniques for the decommissioning of U.S. Department of Defense (DoD) chemical weapon production and storage facilities. Inspected facilities located at Rockport, Indiana, Rocky Mountain Arsenal, Colorado, and Pine Bluff, Arkansas.



## LAWRENCE BRADLEY DECOMMISSIONING CONSULTANT

### PROFESSIONAL QUALIFICATIONS

Larry Bradley has over 45 years of diverse experience in the electrical power generation field participating in the engineering and commissioning start-up of 13 power plants including; gas-fired, coal, lignite, and oil and gas fuels ranging in capacities from 66 MW to 850 MW throughout the world. For the past 33 years, Mr. Bradley has been responsible for the overall design integrity of the St. Johns River Power Park (SJRPP) featuring two 632 MW coal-fired electric generation units.

Additionally, Mr. Bradley acted as the Lead Technical Consultant during the engineering, decommissioning and demolition phases of the SJRPP where he assisted in the development of the technical specifications, contractor reviews and selection, cost estimating and invoice approvals, materials and equipment procurements, decommissioning and demolition plan reviews and approvals, regulatory permit implementation and compliance, and overall technical advisor.

### RELEVANT EXPERIENCE

**Lead Technical Consultant, St. Johns River Power Park Decommissioning and Demolition Project, Jacksonville, Florida, 2017 – Present** – Mr. Bradley is responsible for providing engineering technical support services required for the decommissioning and demolition of the SJRPP. The APTIM team operates as the Owner's Engineer providing professional services including, but not limited to; construction and environmental permitting, site assessments and feasibility studies, regulated materials management, storm water management and oversight, decommissioning scope development and implementation, demolition planning and oversight, and overall project management.

**Environmental Compliance Consulting Engineer, St. Johns River Power Park, Jacksonville, Florida** – Mr. Bradley was responsible for the development and implementation of modifications to meet the Mercury and Air Toxics Standards (MATS) environmental regulations. Compliance was achieved by fuel source choice and the use of boiler and flue gas scrubbing (FGS) additives. Additionally, he initiated plans to comply with the Effluent Limitations Guidelines (ELG) regulation by converting the affected processes to zero discharge.

**SCR Senior Project Manager, St. Johns River Power Park, Jacksonville, Florida** – Mr. Bradley was the Senior Project Manager for the SJRPP SCR Project where Unit 2 was successfully placed in-service January 2009 and Unit 1 in May 2009. This \$282 million project was designed to reduce NOx emissions by 85% and featured innovative measures to minimize forced outages and production losses.

#### EDUCATION

- ▶ Bachelor of Science, Mechanical Engineering, University of Massachusetts, Amherst, Massachusetts

#### REGISTRATIONS/CERTIFICATIONS

- ▶ Six Sigma Qualtec – Green Belt Certification



**Technical Services Senior Project Manager, SJRPP, Florida** – Mr. Bradley was responsible for the overall design integrity of the SJRPP and provided senior oversight management across multi-discipline departments, including:

- ▶ Engineering
- ▶ Fuel Procurement
- ▶ Results Engineering
- ▶ Performance Management
- ▶ Electrical Maintenance
- ▶ Outage Planning
- ▶ Maintenance Planning
- ▶ Project Management
- ▶ Predictive Maintenance
- ▶ Fuel and Water Labs
- ▶ Drafting
- ▶ Instrumentation & Controls
- ▶ Safety
- ▶ Training

**Senior Plant Engineer, St. Johns River Power Park, Jacksonville, Florida** – Mr. Bradley served as the Senior Plant Engineer for the initial operation of Unit 1.

**Lead Start-Up Engineer, Burns and Roe, Inc., Oradell, New Jersey** – Mr. Bradley served as the Lead Start-Up Engineer for Big Cajun Plant Unit 1, Santee Cooper Winyah Station Unit 4 and Seminole Electric Plant Units 1 and 2.

**Lead Start-Up Engineer, Foster Wheeler Energy Corporation, Clinton, New Jersey** – Mr. Bradley served in varying engineering roles and technical consulting for numerous power plants worldwide including Harrison Station Unit 1, Gibson Station Unit 2, Meredosia Station Unit 4, Oswego Station Unit 5, Puentes de Garcia Rodrigues Station Units 1 & 2, San Juan Station Unit 2, Thermocartagena Station Units 1 & 2, Gibson Station Units 1 & 2, and George Neal Station Unit 4.

## ALYSON COBB MORGAN DECOMMISSIONING CONSULTANT

### PROFESSIONAL QUALIFICATIONS

Ms. Morgan has over 35 years of project management, engineering, and technical services experience with JEA. She created business plans for the new revenue process and potential new businesses utilizing JEA assets. Successful plans included timber harvesting, leasing dark fiber, managing security consulting Critical Infrastructure Protection (CIP) compliance, Transmission and Distribution Maintenance (predictive and proactive services), Solar Commercial Generation, Natural Gas Commercial Marketer and marketing other agencies wireless leases. Ms. Morgan researched and wrote white papers on solar generation for utilities and wetland mitigation bank opportunities. Ms. Morgan also assisted with corporate strategy team activities.

#### EDUCATION

- ▶ Master of Science, Engineering Management, University of South Florida
- ▶ Bachelor of Science, Civil Engineering, University of Maine

#### REGISTRATIONS/CERTIFICATIONS

- ▶ Green Belt Certification – JEA
- ▶ Black Belt Candidate – JEA

### RELEVANT EXPERIENCE

**Senior Manager, St. Johns River Power Park Quality Services, Jacksonville, Florida** – Managed process improvement and problem solving effort at SJRPP. Utilized Lean tools, Root Cause Analysis, Black Belt candidate.

**Senior Manager, SJRPP Business Services, Jacksonville, Florida** – Managed the Cost/Budget, Records and Administrative team, Materials & Stores, Safety and Security.

**Senior Manager, SJRPP Technical Services, Jacksonville, Florida** – Managed Environmental Services, Results Laboratory. Continued to develop succession plans for each department. Involved with SJRPP's safety programs and have knowledge of all facets of human resource tasks.

**Superintendent Production, SJRPP, Jacksonville, Florida** – Responsible for Laboratory, Power Block and AQCS production group. Developed training and succession plans for re-staffing. Equipped plant with safety knowledge through leadership with Safety Supervisors. Labor contract negotiations team member.

**Superintendent Group Leader, SJRPP, Jacksonville, Florida** – Administration, Materials & Stores, Cost Control, Outage Project groups and Training. Performed as leader and communicator to 60 SJRPP employees and additional contract crews.

**Assistant Maintenance Superintendent, SJRPP, Jacksonville, Florida** – Performed management functions for the planning and maintenance activities for all areas including coal yard, coal terminal, power block, flue gas desulfurization and solid waste handling systems. Administered \$10 million budget. Coordinated outage schedules and management reports.

**Senior Plant Engineer, SJRPP, Jacksonville, Florida** – Responsibilities included field design tasks, project interface coordinator, and supervisor of the As-Built group with CAD/network capabilities while assigned to the Technical Superintendent.

**Start-up Engineer, SJRPP, Jacksonville, Florida** – Responsible for verification and inspection of completed systems through functionally operating the components of each system. Performed as lead Engineer for Unit 2 activities. Coordinated construction schedules and start-up activities with construction.



## JEFFREY HILLSON PE, SE SENIOR STRUCTURAL ENGINEER

### PROFESSIONAL QUALIFICATIONS

Jeffrey Hillson has over 40 years of national and international, structural/civil engineering experience on nearly 500 public and private-sector design-build and design-bid-build projects. He has demonstrated ability in detail design, specifications, report writing, teamwork, coordination, life cycle analysis, bid evaluation, cost-estimating, safety, and constructability of multidisciplinary engineering projects across diverse markets, including: commercial buildings; water/wastewater facilities; industrial and chemical facilities; flood control structures; marine and port facilities; coastal engineering structures; transportation infrastructure. Structural/civil engineering of infrastructure for environmental projects include revetments for marine landfill caps, ground water remediation, barrier wall performance specifications and pond liners.

#### EDUCATION

- ▶ Bachelor of Science, Civil Engineering

#### REGISTRATIONS/CERTIFICATIONS

- ▶ Professional Engineer, Civil and Structural
- ▶ NCEES Professional Engineer, Nationwide

### RELEVANT EXPERIENCE

**Senior Civil/Structural Engineer, Coastal, Ports and Marine Projects, Baton Rouge, Louisiana** – Structural/civil engineering experience, primarily for flood control projects in Louisiana. General experience includes preparation of detail design, structural calculations, specifications for roller gate and pile-supported receiving structure (foundation). Other important engineering activities include internal technical review (ITR) of drawings and calculations for flood wall, barge (swing gate) and various pile-supported berthing and mooring structures. Engineering of various structures require coordination with land and marine transportation facilities, highways and channels, respectively. Project-related experience include Houma Navigation Canal Lock Complex, Port-Aux-Chenes, Terrebonne Parish, LA Terrebonne Levy and Control District (TL&CD); Humboldt Bay Power Plant (HBPP), Eureka, CA; Houma Navigation Canal (TL&CD). Steel sheet pile bulkhead repairs, Port of Iberia, Iberia Parish, LA.

**Senior Civil/Structural Engineer, Project Engineering, Multiple Projects, Centennial, Colorado** – National structural/civil engineering experience primarily with industrial clients. Experience in detail design, specifications, and third-party/constructability reviews. Project-related experience includes being designer of record for new scrap metal shear facility at Rocky Mountain Recycle, Denver, CO. Third-party design reviews for a variety of new and readapted Schlumberger (SLB) facilities throughout North America.

**Humboldt Bay Power Plant (HBPP), Pacific Gas and Electric (PG&E), Eureka, California** - Mr. Hillson was the Engineer-of-Record for the plans, specifications, design calculations and review of technical submittals during construction for the braced steel sheet pile cofferdam. The project was to Retrofit/Strengthen the cofferdam to facilitate the removal of asbestos insulated, Reactor Cooling Water Outfall pipes. APTIM was brought into the project after the incumbent subcontractor poorly installed an incompletely designed

unbraced steel sheet pile cofferdam that could not resist wind/wave forces in a site directly exposed to the Humboldt Bay channel opening to the Pacific Ocean. There was significant coordination with APTIM's construction group, PG&E and California regulators given the sensitive nature of overall project to decommission a nuclear reactor as well as demolish and remove asbestos laden pipe adjoining a major navigable waterway. The overall, public charge of the removal project was the restoration of the embankment its protective revetment and ultimately the heavily used Humboldt Bay public trail restored to its original alignment.

**Arizona Power Supply (APS), Four Corners, Decommissioning of Coal-Fired Power Generating Units 1, 2 and 3, Four Corners (Farmington), New Mexico** - Mr. Hillson performed an Engineering Assessment (EA) of plant wide common systems which are interconnected and impacted by the multi-stage decommissioning activities of Units 1, 2 & 3. EA and schematic plan preparation of storm water and floor drainage systems. EA also included preparation of structural calculations to rate the load-carrying and lifting capability for a wide range of fixed and moveable lifting devices, including but not limited to underslung monorail cranes and jib cranes. Later work included structural evaluation (Evaluation) for adaptive reuse of the existing structural steel space frame used to support the Brine Concentrator staircase.



## JORDAN CLANCY, E.I.T. PROJECT MECHANICAL ENGINEER

### PROFESSIONAL QUALIFICATIONS

Jordan Clancy is a Project Engineer at APTIM for over four years. He has served in a diverse range of projects from power plant decommissioning, water treatment systems designs, and leading the engineering and installation efforts of multi-million dollar industrial equipment on military bases. During his time at APTIM, Jordan's roles have included project engineering, field inspection, engineering design, and engineering consultation.

#### EDUCATION

- ▶ Bachelor of Science, Mechanical Engineering, University of Colorado, Colorado Springs

#### REGISTRATIONS/CERTIFICATIONS

- ▶ Engineer in Training

### RELEVANT EXPERIENCE

**Project Engineer, Arnold Engineering and Development Complex- Facilities Acquisition for Restoration and Modernization (FARM) Program, Tullahoma, Tennessee** – Mr. Clancy supported the selection of over \$5 million worth of high-performance test equipment for the government. Lead regular design meetings with the Air Force as a project engineer, accountable for overseeing multi-disciplinary design schedules while maintaining the project budget. Lead weekly internal meetings with on-site project team in Tennessee. Accountable for the review and delivery of over a hundred submittals to the government, including all subcontractor drawings, construction specifications, datasheets, calculations, change orders, ect. Oversaw and provided quality assurance of the subcontractor's craftwork and engineering including the installation of boiler ductwork, concrete pedestals for industrial fans, jet engine exhaust gas coolers, and HVAC control systems. Successfully designed and specified mechanical assemblies to replace previously failing designs. Created engineering drawings and wrote installation procedures for actuator and linkage assemblies.

**Project Engineer, Joint Base Pearl Harbor Hickam, Fuel Tank Inspection, Design, and Repair, Honolulu, Hawaii** – Responsible for writing and specifying all subcontractor's statements of work including scaffolding, tank engineering, electrical installation, fuel tank inspection, tank cleaning, and mechanical/piping subs. Accountable for the creation and delivery of submittals to US Navy representatives. Including all test plans, dust mitigation plans, critical material conveyance plans, waste management plans, etc. Obtained a secret clearance through a tier 3 background investigation. Issued subcontracts and change orders to subcontractors through electronic requisition software procedures for the conveyance of critical equipment through underground tunnel systems.

**Project Engineer, Jacksonville Electric Authority- St. John's River Power Park Demolition, Jacksonville, Florida** – Generated a detailed engineering assessment of the isolation of critical mechanical systems, including the fire protection system, potable water system, electrical systems, and wastewater systems. Conducted site survey of structures to determine the safest & most efficient method of demolition. Produced specifications for the mechanical cutting and capping of remaining plant services. Performed calculations to ensure an accurate engineering cost estimate of demolition.

#### Project Engineer, U.S. Army Engineering & Support- Navy Phase V, Panama City, Florida

– Generated a detailed engineering assessment of the isolation of critical mechanical systems, including the fire protection system, potable water system, electrical systems, and wastewater systems. Conducted site survey of structures to determine the safest & most efficient method of demolition. Produced specifications for the mechanical cutting and capping of remaining plant services. Performed calculations to ensure an accurate engineering cost estimate of demolition.

#### Project Engineer, Chicago Botanic Garden- Zebra Mussel Remediation and Prevention, Chicago, Illinois

– Designed and specified construction based on system dynamics and water characteristics. Researched and proposed biological remediation technologies with scientific team. Performed calculations to accurately predict the control method's effectiveness. Produced a comprehensive engineering cost estimate for the installation of the proposed solution.

**Project Engineer, Arizona Public Service- Cholla Power Plant Decommissioning Study, St. Joseph, Arizona** – Produced a detailed engineering assessment, outlining the proper decommissioning/demolition of plant-wide systems, including required mechanical, electrical/controls, and structural engineering modifications. Designed a final site configuration of the plant systems through the various demolition phases. Estimated materials, labor, and equipment required to safely decommission and demolish the plant.

**Project Engineer, Wurtsmith Air Force Base - Groundwater Remedial Design, Oscoda, Michigan** – Calculated pressure drop and flow characteristics for 16 well water pumping systems Utilized AFT Fathom flow modeling software to capture verify calculation results. Sized process pumps and piping for optimal system efficiency. Selected process pump equipment using pump curves and sizing calculations.



## CRAIG MORGAN PROJECT CIVIL ENGINEER

### PROFESSIONAL QUALIFICATIONS

Craig Morgan has professional engineering experience for a variety of projects for federal, state, local and commercial clients in the areas of building and bridge design, coastal flood protection, vehicle maintenance facilities, transportation, process and nuclear facilities. Project responsibilities include the structural design of building and bridge structures, coordination and development of contract documents, and construction phase services. He also provides engineering support for construction and demolition projects.

He has served these projects in several capacities, including Project Manager, Project Engineer, Lead Structural Engineer and supporting Structural Engineer.

Mr. Morgan is a licensed Structural Professional Engineer in six states. His structural engineering experience includes steel, reinforced concrete, prestressed concrete, masonry and wood design.

### RELEVANT EXPERIENCE

**Engineer, APTIM Construction Technology Group (CTG), N/A, APTIM, Canton, Massachusetts** – Mr. Morgan provides engineering support for the APTIM Construction Technology Group (CTG). The CTG provides innovative and responsive support to all APTIM strategic business units (SBUs) from pre-contract constructability optimization through the construction execution period. Responsibilities include:

- ▶ Construction load evaluation for effects on existing structures and utilities.
- ▶ Rigging and lifting plan development and/or review.
- ▶ Weight and center of gravity calculations for verification of the crane's rated capacity.
- ▶ Analysis and design of lifting and handling equipment, including below-the-hook devices, such as spreader beams and lifting lugs in accordance with ASME BTH-1 and B30.20.
- ▶ Coordination and development of fabrication drawings for various lifting components, crane load path drawings, and rigging sketches.
- ▶ Determination of crane mat requirements to satisfy soil allowable bearing pressures.

**Structural Engineer, Demolition, Confidential Client** - Mr. Morgan performed site walkdowns and engineering surveys, preparation of demolition plans, evaluation of buried utilities and building components for heavy equipment loads and miscellaneous engineering to support the demolition activities.

**Derrick Crane Dismantlement, Confidential Client** - This project consisted of providing engineering support for the demolition of the circa 1956 Building 21 Derrick Crane. It consisted of the removal of the derrick crane hoisting engine (draw works), crane cable, boom, mast and supports. Mr. Morgan was involved in the planning activities related to the successful removal of the crane.

**Structural Evaluation, Confidential Client** - This project consisted of performing a Structural Evaluation of non-insulated accessible portions of a 225-ft. diameter Hortonsphere. The Structural Evaluation included a review of available drawings, calculations and previous reports, a visual survey of the structure, and a structural assessment. A

#### EDUCATION

- ▶ Bachelor of Science, Civil Engineering Technology, Wentworth Institute of Technology, Boston, Massachusetts, 2002

#### REGISTRATIONS/CERTIFICATIONS

- ▶ NCEES Professional Engineer
- ▶ Professional Engineer, Civil and Structural

Structural Evaluation Report was developed that presented a description of the building structure, methodology used to perform the visual inspection and evaluation, inspection observations including photographs, and recommendations to address identified deficiencies. Additionally, a ROM cost estimate was provided for recommended repairs.

**RML Stack Demolition, Confidential Client** - This project consists of providing engineering support for the demolition of the 105 ft tall Radioactive Materials Laboratory (RML) ventilation exhaust stack. Mr. Morgan's primary role was to provide structural engineering support to meet the critical lift requirements as defined by the client and other applicable codes and standards. Various tasks include, weight and center of gravity calculations for verification of the crane's rated capacity, analysis and design of lifting and handling equipment, including the crane spreader beam and stack lift connection lugs, coordination / development of fabrication drawings for the various components, crane load path drawings, and rigging sketches.

**Lead Abatement Study, Confidential Client** – The lead abatement type study evaluated several options for lead abatement, including remediation and repurposing, encapsulating and repurposing, and full demolition of the building.

**Structural Feasibility Study and Conceptual Design, Confidential Client** - This project was for a 5'-2' x 4'-4' x 6'-11' tall steel contaminated "hot" cell located within a building. The cell which was built in place in the 1950's was no longer needed and the site has requested a plan to remove the cell from the existing building without the need to use traditional in-place demolition methods. A feasibility study and conceptual design was developed to remove the building using air casters. This recommended method would minimize any impact to the day-to-day site operations by relocating it to an isolated area on-site for demolition.

**Structural Engineer, Humboldt Bay Power Plant D&D, PG&E, Eureka, California** - Mr. Morgan's primary responsibility for the Humboldt Bay project is to provide Structural Engineering to support the demolition activities, including the evaluation of various building components for heavy equipment loads during demolition. In addition, Mr. Morgan's responsibilities include the overall coordination of the structural engineering activities completed in the Canton office.

**Structural Engineer, Engineering Survey - Redstone Arsenal Building 7689, Redstone Arsenal, Huntsville, Alabama** - The northeast corner of Building 7689 in Area 204 (RSA-204) of the Redstone Arsenal required an engineering survey due to an excavation directly adjacent to the existing structure. Proper planning was required to ensure the building's foundation was protected from potential structural disturbance and/or settlement during the planned excavation and backfilling. The Engineering Survey included a review of available drawings, a visual survey of the building, and a structural assessment. An Engineering Survey report presented the methodology, described the condition of the structural components of the building and provided an overall structural assessment.

**Structural Engineer, CSX VA108 Switch House Demolition, CSX, Richmond, Virginia** - This project included engineering design and construction support for the demolition of the VA108 Switch house located directly adjacent to an active CSX rail line in Richmond, VA. Mr. Morgan's responsibilities included the evaluation of the existing structure during demolition, development of the demolition drawings and supporting the project through the demolition phase. This project was successfully completed on schedule and within budget.

## SHANE YENCHI CONSTRUCTION MANAGER

### PROFESSIONAL QUALIFICATIONS

Shane Yenchi serves as a construction manager for highly complex environmental, industrial and commercial construction-based projects. He has over 25 years of experience encompassing project management, site management, quality control compliance, health and safety, field engineering, site assessments, source removal, groundwater treatment systems, and emergency response. He has successfully delivered incredibly complex and diverse remediation and site restoration projects throughout the U.S. for a multitude of federal, state and local government agencies as well as commercial clients. Mr. Yenchi is skilled and experienced with managing the entire lifecycle of projects from site assessment through remediation and site closure.

#### EDUCATION

- ▶ Bachelor of Science, Environmental Resource Management, Pennsylvania State University, University Park, Pennsylvania
- ▶ Associate of Science, Wildlife Technology, Pennsylvania State University, DuBois, Pennsylvania

#### REGISTRATIONS/CERTIFICATIONS

- ▶ USACE Contractor Construction Quality Control Management
- ▶ Professional Engineer, Civil
- ▶ NCEES Professional Engineer

### RELEVANT EXPERIENCE

**Southside Generating Station Decommissioning, JEA, Jacksonville, Florida** – Mr. Yenchi assisted JEA with compliance issues during the demolition of their Southside Generating Station, which is regulated jointly under RCRA and the Brownfield Redevelopment Act. Worked closely with JEA project management and environmental department on issues of environmental concern and general construction activities. Involved with development, review, and implementation of site engineering investigation and operation plans. Provided oversight for confirmatory, investigation, and delineation soil sampling. Also provided construction oversight of excavation efforts for removal of contaminated soils and assisted JEA with consolidation, management, and disposal of hazardous and non-hazardous materials requiring offsite disposal. Additionally, some portions of the project required in situ chemical fixation of soil with elevated lead concentrations prior to disposal.

**Professional Services for Decommissioning Management for SJRPP, JEA, Jacksonville, Florida** – Mr. Yenchi is the Lead Environmental Specialist providing professional environmental services for decommissioning management at JEA's St. John's River Power Park Power Plant.

**US 301 Bypass Area A Remediation, FDOT District 2, Baldwin, Florida** - Mr. Yenchi implemented work plans and managed day-to-day site construction activities for a 31,000 CY dioxin-soil remediation project. FDOT's right-of-way (ROW) was contaminated by runoff from an adjacent wood treating facility impacting 19 acres of wetlands. This time critical removal included harvesting of trees from the forested wetlands, removing the top foot of soil from the ROW, managing and controlling surface water flow and site stormwater runoff, implementing and managing HAZWOPER site access, controls, and decontamination, planning of site excavation and grading, and construction of clean fill berms around the site perimeter to prevent re-contamination of the ROW.

**SR 21 Pond Construction, FDOT District 2, Middleburg, Florida** - Mr. Yenchi managed the on-site construction activities for petroleum-contaminated soil and debris removal (8,000 CY) from a pond expansion project along SR 21. Installed and operated a water recovery and treatment system to remove

PAH compounds from the groundwater. Directed the site grading and construction to cut the pond to the rough line and grade for final completion.

**Groundwater Recovery System (GRS), Kennedy Generating Station (KGS), JEA, Jacksonville, Florida** – Mr. Yenchi oversaw a five-year construction and O&M project for a complex GRS at KGS. Prior to construction Mr. Yenchi and the APTIM team provided value engineering support of an innovative GRS design resulting in substantial cost savings for JEA. The GRS created a hydraulic barrier intercepting potentially contaminated groundwater from migrating off-site to the St. Johns River. The GRS consisted of 24 groundwater recovery wells along the riverfront and treatment system. During O&M of the GRS, the APTIM team developed a means of back flushing the polishing media, a process not included in the system design, which ultimately provided substantial cost savings by extending the life of the media between change outs. In recognition of his outstanding performance, Mr. Yenchi received letters from JEA regarding the project's exceptional safety record and outstanding overall performance.

**FDEP Preapproval CSXT Baldwin Rail Yard Source Removal, Baldwin, Florida** - Mr. Yenchi performed source removal remediation activities on petroleum-contaminated soils at the CSXT rail yard in Baldwin, Florida, via the State of Florida Preapproval program. Field activities included excavation and off-site disposal of 21,054 tons of excessively contaminated soils, groundwater dewatering via a subsurface sock system, treatment and discharge of 428,900 gallons of petroleum-contaminated water, application of enhanced bioremediation solutions, and backfilling open excavations.

**South Retention Pond Closure, Southside Generating Station Decommissioning, JEA, Jacksonville, Florida** – Managed site assessment investigation to delineate contamination in South Retention Pond 1 and develop Remedial Action Plan Specifications for the pond closure. Provided critical oversight during excavation of contaminated soil to ensure remediation targets and achieved schedule. Excavated and disposed of over 4,406 cubic yards of sludge.

**Former Lee Field NAS Aircraft Service Pit Remediation, U.S. Army Corps of Engineers, Green Cove Springs, Florida** – Successfully removed 50 aircraft service pits and impacted soil as well as 16,000-feet buried asbestos-coated diesel fuel piping from 22-acre former service pit area. Disposed of 2,800 tons of contaminated soil. Confirmatory sampling verified a successful remediation. Mr. Yenchi's creative field change to the excavation sequencing allowed for the current property owner to continue using most of the 22-acres without disruption to business.

**Coronet Industries Pond 6 Closure, Superfund Site, Plant City, Florida** - Mr. Yenchi managed construction of a multi-layer cap on a 70-acre process water-holding pond at a former phosphate rock mine and chemical plant. Contaminants of concern included metals as well as radiological. Multi layered cap system consisting of geotextiles and soils. Installed 7,500-feet of HDPE groundwater interceptor drain around perimeter of Pond 6. FDEP comments during construction lowered the elevation of the drain by several feet. Mr. Yenchi designed and used a large trencher to install the pipe that proved to be a substantial cost saving over open excavation and dewatering. Project included permitting, clearing/grubbing, storm water management, sedimentation and erosion controls, final grading and site restoration. Received a letter of recognition from the owner's engineer for quality of work and innovative cost saving value-engineering support.

## JEFFREY GAGE CONSTRUCTION MANAGER

### PROFESSIONAL QUALIFICATIONS

Jeffrey Gage has over 30 years of managerial and hands-on experience in decommissioning and demolition, environmental and remediation projects. During this time, he has gathered a wealth of experience in many facets of the remediation and construction fields. His site responsibilities have included site management, equipment operation, transportation and disposal scheduling, and report/plan preparation.

As a Site Manager for the company, Mr. Gage is responsible for the overall supervision and management of site operations. This includes personnel, equipment, subcontractors, safety, cost, and schedule control, compliance with all applicable regulations, reporting, and liaison activities with the client. He has the authority to represent and make commitments on behalf of the company to the client regarding all aspects of project implementation.

### RELEVANT EXPERIENCE

**Site Manager, Coronet Industries Rap 1 and 2 in Plant City, Florida** – Mr. Gage was the Site Manager responsible for all aspects of on-site work activities and personnel for this project. The project consisted of capping four areas of the site Ponds 2/2A (48 acres), Pond 1S West (15 acres) and East (4.5 acres) and the Process Ditch Area (20 acres). The project scope included: clearing and grubbing cap areas as well as the onsite borrow areas; constructing stabilized haul roads through Ponds 2/2A and Pond 1S; assisting Flint Industries with deployment of geotextile reinforcing material; installing 18-inches of sand cover over geotextile; managing Comanco with installation of the 40-mil HDPE liner; covering the liner with fill and topsoil to design final grades; installing new water management structures and pipe; and site restoration upon completion of earthwork. Other key operations supporting cap construction include; diversion ditch construction, surface water management, and stripping of topsoil for reuse.

**Site Manager, NRG Brandywine Ash Storage Site Closure, Brandywine, Maryland** – Mr. Gage was the Site Manager and responsible for all on-site and personnel activities. This project scope included the installation of erosion and sediment controls prior to capping activities, clearing and grubbing of existing vegetation, stripping of soils to be reused for cap cover material, installation of the 40-mil HDPE liner, 250-mil geocomposite drainage layer, placement of cover soil, permanent seeding and erosion mat installation, installation of permanent erosion and sediment control features and final site restoration.

*This project received NRG's 2017 Engineering & Construction Excellence in Safety Award!*

**Site Manager, Avtex Fibers Superfund Site, FMC Corporation, Charleston, West Virginia** – Mr. Gage was the Site Manager for this project to remove the concrete foundations at FMC's former East Plant site in South Charleston, West Virginia. The scope involved removing approximately 16,800 cubic yards of subsurface reinforced concrete, excavating approximately 800 cubic yards of hazardous soils and 100 cubic yards of non-hazardous soil associated with the foundations, and screening approximately 28,300 cubic yards of soil for use as backfill at the project site. The excavated concrete was crushed to a 2 minus. At the completion of the foundation removal, the site was leveled and graded using the screened soil and was topped with the crushed concrete as a finish material.

#### HIGHLIGHTS

- ▶ Over 30 years of management and hands-on experience in hazardous waste site remediation
- ▶ Experience includes crew supervision, equipment operation, transportation and disposal scheduling, and report/plan preparation

**Superintendent, Sludge Basins Remediation, Avtex Fibers, Front Royal, Virginia** – Mr. Gage was Superintendent for the sludge moving portion of the project as APTIM successfully closed Sulfate Sludge Basins 2 and 5 at the Avtex Fibers Superfund Site in Front Royal, Virginia. These basins contained zinc sulfate sludge, which many pumping professionals deemed unpumpable. APTIM removed the sludge from these basins by both pumping and trucking the sludge and consolidated the sludge in Sulfate Sludge Basin 4. APTIM moved a total of approximately 280,000 cubic yards of sulfate sludge during the course of the closure activities.

**Site Manager, Hudson River Cleanup Project Phase 1 and 2, General Electric, Fort Edward, New York** – Mr. Gage was the Site Manager overseeing operation of the sediment processing, treatment and transportation facility on a 110-acre site along the Champlain Canal in Fort Edward, New York. His team operated the facility 24 hours a day, 7 days a week with a team of over 90 craft labors, along with 20 APTIM management/technical personnel. Project work consisted of over 180,000 manhours without a lost time incident. The facility was designed to process up to 5,100 cubic yards daily and over 365,000 cubic yards was processed during the construction season. All 365,000 cubic yards of processed sediment was shipped off site via rail cars for disposal. Along with the processing of the sediment, over 237,000,000 gallons of PCB-contaminated water was treated and released back to the Champlain Canal. The major components of the process facility were a wobbler conveyor system, trommel screen, shaker screens, hydrocyclones, 12 filter presses and a 1,500 GPM water treatment plant.

**Site Manager, Hudson Falls Processing Facility, General Electric, Hudson Falls, New York** – Mr. Gage was responsible for the day-to-day operations of the GE Hudson Falls Processing Facility. As the Site Manager, he managed 29 APTIM staff, 65 union operators, 36 union laborers, and 18 teamsters as well as electrical, millwright, and mechanical subcontractors. As the Site Manager, he was also responsible for the interaction with all of the union business agents and served as the administrative liaison between APTIM and the unions. Mr. Gage ensured that the craft labor obtained all of the site-specific training and adhered to all standard operating procedures while performing the work. By the end of the first processing season, the facility offloaded 4,804 barges containing 2,754,238 cubic yards of sediment. The project also produced 32,505 filter press drops, processed over 1.3 billion gallons of water, and successfully loaded and packaged 26,571 rail cars. Mr. Gage was responsible for the entire project from oversight of the project startup and commissioning through winterization upon completion of the sediment processing. He represented APTIM operations at daily and weekly production meetings with the client and was responsible for reporting key production metrics, analyzing production performance and forecasting production, manpower, and equipment requirements.



## GARY WYRWA CONSTRUCTION MANAGER, ASBESTOS OVERSIGHT

### PROFESSIONAL QUALIFICATIONS

Mr. Wyrwa has over 30 years of experience in performing decommissioning, environmental and industrial hygiene related projects. He has extensive experience in the field of asbestos and lead-based paint testing, inspection, monitoring and abatement oversight, and utilization of the x-ray fluorescence (XRF) Spectrum Analyzer in accordance with federal, state and local regulations. He currently holds various asbestos certifications in multiple states.

Mr. Wyrwa has experience coordinating quality control activities. These include enforcing standard operating procedures for all activities that take place during a project; writing daily activity reports; attending daily meetings; archiving photo and video documentation; tracking all documentation and equipment; making entries into the building; and tracking the collection of all samples.

### RELEVANT EXPERIENCE

#### Site Supervisor/Project Monitor, General Electric, Former Building 109, Schenectady, New York,

– Mr. Wyrwa performed daily air monitoring and oversight of activities, which included the removal of approximately 571 tons/38 roll-offs of asbestos-contaminated soil, along with the segregation and decontamination of large pieces of concrete. Daily air samples were collected around the perimeter of the work area, as well as within the work area. The New York State Department of Labor performed a site inspection. General Electric performed a final inspection of the project area. The project was completed ahead of schedule and on budget.

#### Asbestos Building Inspector, Facility-Wide Asbestos Inspection, Exelon Generation, LLC, New Boston Generating Station, South Boston, Massachusetts

– Mr. Wyrwa was responsible for the facilitative inspection of suspect materials, which included the collection of bulk samples, assessment of the condition and quantity and development of abatement cost estimates for each material. Facilitative inspections were performed in 1898 Building, Switch Houses Nos. 1 through 4, 1904 Edison Building, 1964 New Boston Building, Former Boiler House No. 3, 1964 Screen House, Switch House No.5 and Tank Farm.

#### Damage Assessor, Hurricane Sandy Damage Assessment Program, Consolidated Edison Company of New York, Inc., New York

– Mr. Wyrwa served as Damage Assessor at the Con Edison Staten Island operating location to provide technical resources for the assessment of damaged utilities and site safety management associated with Hurricane Sandy damage.

#### EDUCATION

- ▶ Environmental Science Coursework, Boston University, Boston, Massachusetts

#### HIGHLIGHTS

- ▶ Over 28 years of project management experience in performing environmental and industrial hygiene related projects

#### REGISTRATIONS/CERTIFICATIONS

- ▶ Lead Inspector
- ▶ Asbestos Abatement Site Supervisor
- ▶ Asbestos Air Monitoring Technician
- ▶ Asbestos Building Inspector
- ▶ Asbestos Management Planner
- ▶ Asbestos Project Designer
- ▶ Asbestos Project Monitor
- ▶ Site Safety Officer

**Site Inspector/Supervisor/Monitor, Trenton Central High School, NJSDA, Trenton, New Jersey** – Mr. Wyrwa performed a pre-demolition site investigation of Trenton Central High School, which was built in 1929 and is approximately 500,000 square feet. The site investigation included the collection of approximately 1,500 suspect materials for asbestos content and approximately 30 samples of lead-based paint content. APTIM also collected suspect materials for PCB content and soil samples throughout the property for excavation delineation purposes. During asbestos abatement and demolition activities, the team performed daily air monitoring and oversight. The client was extremely pleased with the work performed. APTIM completed the project on time and within budget.

#### Site Supervisor/Project Monitor, Various Properties in Kearny, New Jersey and North Bergen, New Jersey, CSX Transportation

– Mr. Wyrwa performed pre-demolition inspections of various properties following Hurricane Sandy. Mr. Wyrwa was responsible for determining the extent of the damage and collecting samples of damaged building materials for analysis of mold, fecal coliform, asbestos, and lead-based paint. Once sample analysis was received, Mr. Wyrwa was responsible for oversight of clean-up and abatement of all containment materials prior to renovation and demolition activities.

**Site Inspector/Supervisor, Koch Industries, Wilmington, North Carolina** – Mr. Wyrwa led a team of inspectors who performed a pre-demolition site investigation of approximately 600 vessels and 50 buildings. The project team collected samples of suspect materials for asbestos and PCB content. At the completion of the project, the team prepared a detailed (approximately 800 pages) report, which detailed the miles of pipe insulation, 600 vessels, and 50 buildings located throughout the refinery showing where asbestos-containing material was and was not present. APTIM completed this project on time and within budget.

#### Site Supervisor/Quality Control Supervisor, Asbestos Abatement and Interior Demolition, Fort Myer, Virginia, U.S. Army Corps of Engineers, Baltimore, Maryland

– Mr. Wyrwa was responsible for coordination of the interior demolition of Building 249, which included the removal of both asbestos-containing and non-asbestos containing materials and the appropriate containerization and disposal hazardous and non-hazardous materials. He was also responsible for the coordination and oversight of asbestos abatement activities. An industrial hygienist inspected work areas and collected air samples. His other responsibilities included writing daily activity reports, submitting daily quality control reports, and attending progress meetings.

#### Site Supervisor/Quality Control Supervisor, Upgrade of the Red Tunnel, Architect of the Capitol, Washington, DC

– Mr. Wyrwa was responsible for the coordination of all activities with the Capitol Police Department. He was also responsible for confined space entry and monitoring, and coordination and oversight of asbestos abatement activities, which included work area and the collection of air samples with an industrial hygienist. Mr. Wyrwa coordinated re-insulation activities and was responsible for writing daily activity reports and submission of daily quality control reports.

## DANIEL THOMAS DIXON JR. FOREMAN

### PROFESSIONAL QUALIFICATIONS

Daniel Dixon is a foreman with APTIM with over 20 years of experience working on a wide variety of remediation and demolition projects. He is a certified operator of heavy equipment and is experienced with directing technical crews in the field. He is familiar with working in both the commercial and government sectors for the company. Daniel is a certified USEPA Asbestos Supervisor and is current with all certifications as a radiological technician and crane operations including rigging safety.

Daniel performed two critical projects for APTIM as a lead foreman including work on the decommissioning and demolition of the USS Sturgis in Galveston TX completed in 2018 and most recently the dismantlement of an overhead derrick crane at a Naval facility in NY. Both projects were completed successfully without any safety incidents.

### RELEVANT EXPERIENCE

**Crane Dismantlement and Asbestos Abatement, Confidential Client** – Worked on a team to abate and dismantle an old derrick crane perched 40 foot above grade. Removed the crane's doghouse and draw works and assisted with rigging for the systematic dismantlement of the crane components. Minor asbestos removal was performed using wet bag techniques and packaged waste for offsite disposal. Once all crane components were brought to ground level all steel was size reduced and packaged for offsite disposal to a Naval waste facility. All of the work was performed ahead of schedule and without safety incidents.

**Sturgis D&D, Galveston Texas** – Mr. Dixon was involved with a variety of decommissioning tasks including:

- ▶ Removal of lead paint from cut lines and welded areas using scarifiers. Used walk-behind scarifier with 55 gallon drum HEPA vacuum for large deck/roof surfaces.
- ▶ Removal of air ventilation systems with impact guns, socket kits, reciprocating saw, and nibblers.
- ▶ Removal of Canopy Sections by drilling holes with magnetic base drills through metal, poly, asbestos sheeting and lead. A stud gun was then used to weld special all-thread studs to the backing plate of the canopy. Epoxy was installed and washer and nuts were fitted and left to dry. Larger 2 inch holes were drilled for the hydraulic diamond saw which was used with pulleys to cut pieces of the canopy out as the gantry crane was rigged up to lift the pieces to the disposal container. Canopy lifting bars were installed also but drilled and treaded rod and epoxied with washer and nuts installed.
- ▶ Cut torque box sections with hydraulic diamond saw and used gantry crane to hook up and remove section to waste container.

### EDUCATION

- ▶ Certificate Program, HVAC, Lincoln Technical Institute, Clinton Maryland
- ▶ Certificate Program, Plumbing, St. Mary's County Technical Center, Leonardtown Maryland
- ▶ USEPA Asbestos Supervisor
- ▶ 24 hour Fall Protection, Competent Person Training
- ▶ Basic Rigging
- ▶ Overhead Gantry Crane Training
- ▶ Mobile Crane Safety General Training

- ▶ Assisted contractor that used a hydraulic diamond saw to cut large sections of the reactor, and protective sections. Helped with pipe set-up for pulleys, assisted in running diamond wire for the cuts that were being performed, kept watchful eye on water during cutting process. Helped with clean up and movement to another cut position.
- ▶ Performed confined space Supervisor/Attendant roles in the cleaning and decon and sampling of ballast tanks on the vessel. Used tripods, harness, labeling areas, confined space and hatch opening permits. Assisted shipyard competent persons with clearing spaces that were going to be entered.

### Patuxent River/Solomons Island/Webster Field, Maryland –

- ▶ At Patuxent River site, assisted with removal of a 12,000-gallon UST, including cutting access holes in tank, preparing tank for scrap disposal, and backfilling excavation.
- ▶ At Solomons Island, installed a bio-retention pond, planted landscaping, installed infiltration trenches in areas where water collected as part of a low-impact water drainage development project. Also performed surface sloping with equipment, and seeded areas that had been disturbed due to installation process.
- ▶ At Webster Field, removed asphalt in area where concrete pad would be installed and framed out area for tank pad. Installed and tied rebar, poured concrete, floated pad and finished (brushed) surface area. Installed diesel and gasoline tanks, secured tanks, stairs, bollards (safety protection), helped install conduit for electrical hook up with electrician.

**Southern Maryland Wood Treatment Plant, Hollywood Maryland** – Responsible for operation of two thermal desorption units and wastewater treatment systems for on-site remediation of 270,000 tons of soil contaminated with creosote and pentachlorophenol. As supervisor, responsibilities included assuring that safe and efficient operation of thermal and vapor recovery units met both Shaw and U.S. Government standards and ensuring that operational parameters were maintained.

**FMC Soda Ash Plant, Green River, Wyoming** – Oversaw fuel storage tank dismantling and removal by subcontractor, including removal of contaminated soil in dike area where fuel storage tank resided. Assisted with load out and manifest of materials for shipment. Assisted with plugging and removal of old fuel storage lines with pigs and sealant compound.





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