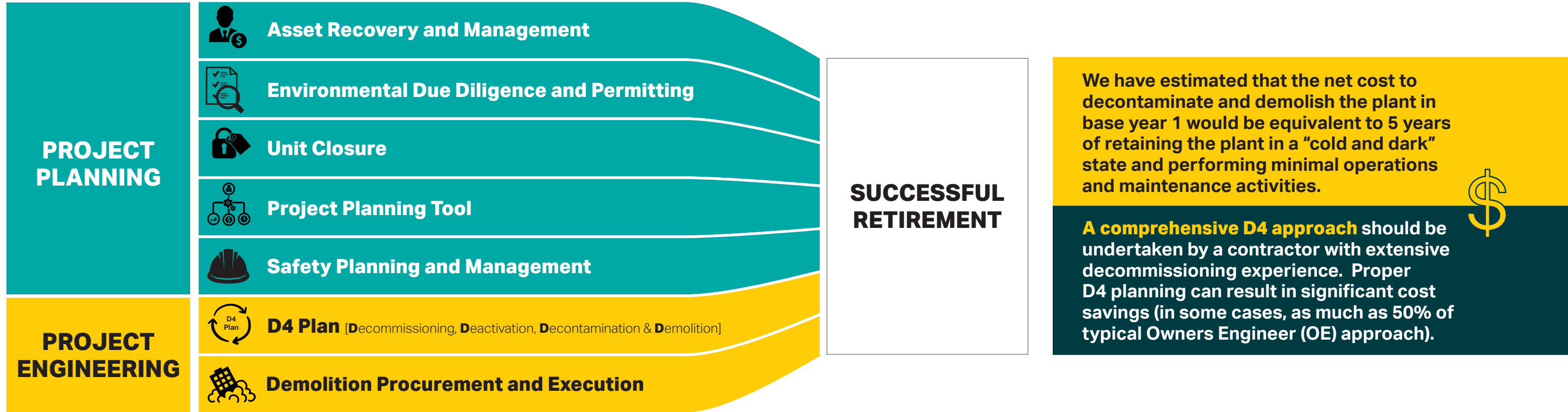





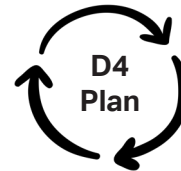



# Project Planning and Engineering at the Onset of Power Plant Retirement



Getting Started in the Right Direction



PROJECT PLANNING					PROJECT ENGINEERING	
<p><b>ASSET RECOVERY AND MANAGEMENT</b></p> <p>A large part of every facility closure project is offsetting as much costs as possible through the strategic liquidation of surplus assets. Surplus assets can be defined as anything of value that can be sold to reduce the out of pocket costs to have the work performed.</p> 	<p><b>ENVIRONMENTAL DUE DILIGENCE AND PERMITTING</b></p> <p>It's important to have a clear idea of the liabilities present on your site so you can plan with the endpoint in mind, managing risks, and maintaining compliance at every step of your closure. Multimedia permitting is necessary to maintain status while cold idled as well as preparing to close these permits for complete facility retirement.</p> 	<p><b>UNIT CLOSURE</b></p> <p>The new Coal Combustion Residuals (CCR) rule brings new requirements to this already complex industry. The careful planning and study of feasible options is necessary to best understand and position to minimize cost and liability when idling and later retiring a power plant.</p> 	<p><b>PROJECT PLANNING TOOL</b></p> <p>It's important to have a manual as a tool that identifies all environmental and engineering aspects of the project using written checklists/procedures, ensuring that the project is completed in accordance with your objectives and local, state/provincial and federal/national governmental regulations.</p> 	<p><b>SAFETY PLANNING AND MANAGEMENT</b></p> <p>Thorough D4 safety planning results = exceptional overall schedule and budget results! It's important to measure twice and cut once. The trust and verify process must include highly experienced and qualified D4 and CCR SME's that know the right questions to ask at the right time, which is in the planning phase.</p> 	<p><b>D4 PLAN</b> [Decommissioning, Deactivation, Decontamination &amp; Demolition]</p> <p>It's critical to develop a comprehensive management plan to successfully, safely and economically guide a project away from operation, through cold-idling, and later demolition, completing the full life-cycle of the D4 process. The plan incorporates demolition best practices and procedures to effect a safe and uneventful project completion.</p> 	<p><b>DEMOLITION PROCUREMENT AND EXECUTION</b></p> <p>Transitioning the fully developed design and specifications through the bid, evaluation, and award stages is an important process. During the process, the options are thoroughly vetted and the appropriate mechanisms are selected to realize cost-savings through a carefully planned strategic approach. Typical procurement approaches for demolition fail to address any of the causes of the last ten fatalities that occurred on power plant demo project; however, our D4 selection and management approach does, as we can provide decades of zero injury examples.</p> 



# Project Planning and Engineering at the Onset of Power Plant Retirement



## Getting Started in the Right Direction



Through effective planning and diligent assessments, AECOM has partnered with utilities to provide guidance during the early stages of plant retirement.

### Overview

When a company decides to close a facility, it faces the challenges of defining divestiture options, and taking those options to the external market. They further must execute the selected option, close on sale of the property and simultaneously meet a myriad of regulations while minimizing long-term environmental, legal and financial liabilities.

AECOM's systematic and comprehensive approach to facility closure focuses on safety, compliance and cost-effective solutions. AECOM's staff combines local knowledge with world-class expertise in design and implementation of facility closure projects. During the early phases of plant retirement, thorough planning and preparation provide the foundation for cost effective and safe demolition. We are ready to partner our expertise with your site to start your project in the right direction.

### Our Approach

AECOM delivers cost effective, professionally managed facility closure services to our clients, ranging from assessments and permitting to design and delivery of D4 programs. We use a range of delivery mechanisms tailored to project requirements, including design/build and turnkey options for sensitive projects where continuity of the project team is critical for success.

Our approach is holistic by design; the breadth of AECOM permits us to offer a full suite of engineering and related services integral to facility closure. Our services include asset recovery to increase project value, architectural and real estate planning to envision and assess property potential, economic evaluation of divestiture options, engineering assessments of hazardous materials, and design and management of facility demolition. AECOM has a long history of safely completing decommissioning projects and programs.

As Owner's Engineer, our staff has the right experience to manage all aspects of a D4 Project and Program.

### Areas of Expertise

#### PROJECT PLANNING

**Asset Recovery and Management.** AECOM investment recovery professionals take pride in finding as much value as possible and conveying that value directly against your bottom line so the work can be accomplished as economically as possible without sacrificing safety, quality, or protection of the environment. Once assets are identified, AECOM designs and implements asset handling protocol to ensure materials do not disappear throughout the course of the work through mishandling and/or theft. This program fortifies ethical behavior and promotes transparency and subsequent loss of revenue.



**Environmental Due Diligence and Permitting.** AECOM offers assessment of current conditions for closing plants including environmental concerns (e.g., asbestos, lead, etc.), structural integrity, real property valuation, potential building/equipment reuse/recycling, and a high level assessment of natural resource assessment potential such as wetlands, habitat, and water/mineral rights. In addition, AECOM works with the client's various stakeholders to develop management approaches in each area (and collectively) which demonstrate best path forward.



**Unit Closure.** AECOM is a leading provider in CCR management with current, relevant and applicable experience permitting, designing, and constructing closures and more for CCR as well as non-CCR units. The careful planning and study of feasible options is necessary to best understand and position our clients to minimize cost and liability when idling and later retiring a power plant. Our experience with local, regional and Federal environmental agencies complimented by our deep bench of innovative solutions results in a coordinated approach to closing the CCR and non-CCR units (e.g., ponds, landfills, coal yards, cooling ponds, and more).



**Project Planning Tool.** AECOM uses a proven, systematic approach to decontamination and demolition, beginning with preparation of a Facility Closure Manual (a Project Planning Tool). The Manual identifies all environmental and engineering aspects of the project using written checklists/procedures, ensuring that the project is completed in accordance with client objectives and local, state/provincial and federal/ national governmental regulations.



**Safety Planning and Management.** Our AECOM D4 SME's know **why, when** and **how** to address the greatest D4 risk. Without our D4 approach, substantial contractual and project risk are incurred. E.g. to address a very dangerous demo approach post award, often result in costly change orders and the direction of the contractors means and methods.



#### PROJECT ENGINEERING

**D4 Plan.** AECOM is uniquely qualified in this area, having partnered with many in the industry to develop programmatic approaches to identify and later implement safe, cost effective, and compliant plans that manage liabilities effectively through the final stages of the plant. This includes the development of engineering drawings and specifications to support the D4 Plan and communicate this to leadership and prospective contractors.



**Demolition Procurement and Execution.** Transitioning the fully developed design and specifications through the bid, evaluation, and award stages is a process that AECOM is extremely experienced with...there will be no learning curve! While there are many ways to contract D4 projects, AECOM is familiar with vetting the options and providing guidance to select the most appropriate mechanism for you. Once selected, AECOM can partner with the utility to provide procurement support through all stages.



### MORE INFORMATION

[AskEnvironment@aecom.com](mailto:AskEnvironment@aecom.com)

**AECOM provides unsurpassed value and guidance during the early phases of plant retirement.**