

## Estimating

## OUR TEAM AND ESTIMATE PRODUCTS

#### SECTORS SERVED BY OUR TEAM

Over the past 16 years, High Bridge has developed a world class estimating capability designed to serve the nuclear, fossil, co-gens, and solar sectors as well as industrial and commercial construction. High Bridge has performed hundreds of independent cost estimates for major plant mods & upgrades including Open Phase Relays, Steam Generator Replacements, Fukushima, EPU, PRNM, NFPA-805, EHC, DCS, PAS, Main Control Room, Turbine C/L, Diesels, Heat Exchangers, Pipe System Replacement, and Decommissioning.

High Bridge estimating teams include both technical and cost personnel with extensive field experience. Many are former electricians, fitters, boilermakers, design & field engineers, and mods task managers whose decades of knowledge distinguish High Bridge from competitors.

#### **AACE CLASS I-V ESTIMATES**

High Bridge offers a variety of estimate products designed to provide accurate cost data, depending on the size and design phase of client projects.

The Estimate Lite Package is a lower cost estimate option for projects in the early design phase and can be paired with our engineering services and Level I-II schedule (see page 5).

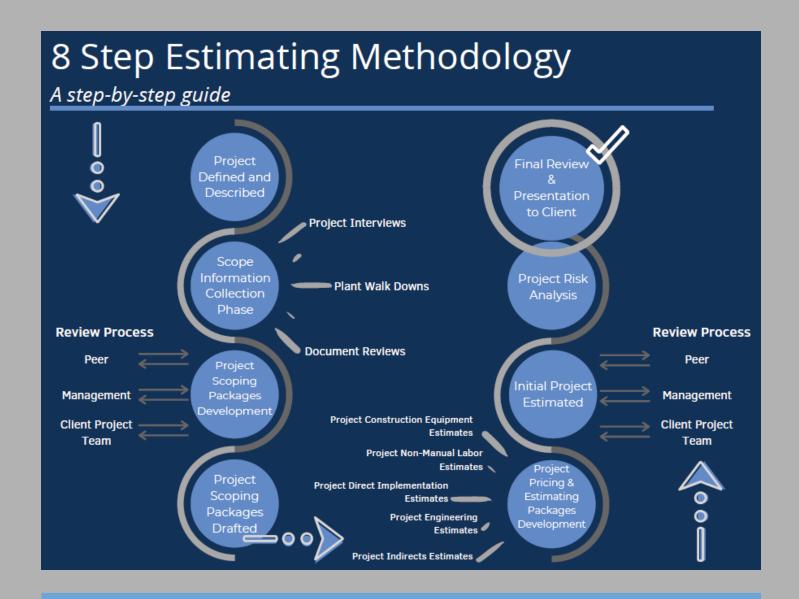
High Bridge's flagship product is a complete detailed take-off package that clients often use to develop work packages and manage work in the field. Our unique process (shown at right) delineates the steps taken to develop a detailed Class I-III estimate package with complete basis of estimate, where our team works with the client to ensure stakeholder alignment through each development phase of the estimate.

### PROJECT RISK ANALYSIS

High Bridge develops two risk values: an estimate accuracy risk value based on design percentage completion and a management reserve value based on discrete risks and opportunities. Risks are tracked and developed throughout the estimate life-cycle by our experts in collaboration with the client team. High Bridge performs a Monte Carlo analysis

for each category of risk and generates charts and tables to visually contextualize the project risk profile. Lastly, a range of risk values is presented to the client along with the value recommended by High Bridge experts. Clients choose the final value.





#### **WINESTIMATOR®**

From the beginning to end of every estimate, High Bridge harnesses the power of WinEstimator software. Site-specific data tables, client and estimate specific sort fields, customized reporting, and data exporting capabilities allow High Bridge to support those special requests for what-if analysis, quickly change pricing assumptions, or export data for interface with other project software like Primavera.

### DETAILED REPORTS from Winest®

Row		Note					Qty	UoM	Base Unit Rate	FIGF Factor	Adjusted Unit Rate	Labor Hours		
1	EPC CONTRACTOR TOTAL COST											514,074		
2	UNIT 1											256,219		
3	CONSTRUCTION & STATION SUPPORT PHASE											256,219		
4	CONTRACTOR LABOR											253,820		
5	CONDENSER A & B											56,554		
6	MECHANICAL DIRECT LABOR											44,820		
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		require	d for each	mod	tule. Estimat	e								
		assum	es center	punc	thing and pair	nting								
		market 1						_	AE/EOC	Non-Manual				
8	FLUSH AND DUMP SUPPORT	Lat	or Rate	L	abor Total	Mε	at'i Tot	al	Total	Labor Total	Sub(s) Total	Other Total	G	rand Total
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11	RIGGING, INSTALL	ŝ	50		5,410			-	s -	\$ -	S -	\$ -	S	5.410
12	WATER BOXLIFT RIG. INSTALL	1*	30	١*	3,410			1	•	* 1	•		١ ٠	3,410
12	WATER BOXLIFT RIG, INSTALL	1												
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13	INLET WATER BOX UNBOLT	\$	50	\$	27,049	\$		_	8 -	\$ -	8 -	\$ -	\$	27.049
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14	INLET WATER BOX MOVE TO REMOVAL POSITION	\$	50	\$	2,254	\$		-	S -	\$ -	S -	\$ -	\$	2,254
		8	50	\$	11,270	\$		-	S -	\$ -	S -	\$ -	\$	11.270
15	INLET WATER BOX RIG	\$	50	\$	4,508	\$		-	\$ -	\$ -	S -	\$ -	\$	4,508
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		\$	50	\$	5,410	\$		-	\$ -	\$ -	\$ -	\$ -	\$	5,410
16	INLET CIRC. WATER EXPANSION JOINT, REMOVE	1												
17	INLET CIRC. WATER PIPING, COVER													
		\$	50	\$	18,032	\$		-	\$ -	\$	\$	\$	\$	18,032
18	OUTLET WATER BOX, UNBOLT	1												
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# Engineering

#### SERVICES AND SOLUTIONS

#### INTRODUCTION TO HIGH BRIDGE ENGINEERING

High Bridge is an industry leader in engineering, estimating, and project controls in the nuclear, fossil, and renewables sectors across the US and abroad. Since the company's inception, High Bridge has been performing engineering functions on an as-requested basis for our clients. High Bridge recently opened our formal Engineering Office in Chattanooga in response to clients' feedback and now provides the services listed as follows:

- Conceptual Engineering
- Engineering Scoping
- Third Party Analysis
- Feasibility Studies
- Alternative Analysis

These engineering services can be provided as stand-alone products or can be integrated into our existing estimate portfolio of services, depending on client needs.

Without precise and accurate engineering scope, a project can go off the rails months to years before implementation. High Bridge is here to keep projects on track, on time, and under budget — right from the beginning.



### LEAN TEAM: EXPERIENCED & COLLABORATIVE

#### **OUR ENGINEERS**

For the engineering team, High Bridge adopted the same strategic workforce development approach as that used for our estimating division: we recruited experienced leaders and team players who have been performing the work at operating facilities. High Bridge assembled senior engineers that have performed engineering at numerous nuclear, fossil, and heavy industrial plants around the country.

High Bridge engineers work directly with clients to ensure that the engineering scope and conceptual design are all-inclusive and will work for clients' specific needs. Engineers at High Bridge have engaged in large and complex projects such as Steam Generator Replacements, GSI 191, NFPA 805, License Extension, Digital & Analog Controls Upgrades,

Turbine Replacements/Overhauls, Generator Replacements/Overhauls, Turbine and Generator Control Systems, Major Transformer Replacements, Simulator Upgrades/ Replacement, Plant Process Computer, Fossil Environmental Controls, and Environmental Remediation, etc. Furthermore, High Bridge provides 1) critical subject matter expertise to industries experiencing knowledge gaps and SME shortages and 2) an open environment for discussing engineering problems and solution options.

Within the past two years, our team conducted a lengthy exploratory campaign, engaging with engineering leadership across the US to assess project engineering problems. We developed the Conceptual Engineering and Estimating Package, a solution to initial engineering design and budgetary estimate inadequacy in the industry.



## CONCEPTUAL ENGINEERING & ESTIMATING

High Bridge understands that a project without the proper foundation has a much higher chance of failure. We provide our clients with tools and information to build that sturdy project foundation, the first step in proactively mitigating long-term potential risks. Conceptual engineering scope development is an important aspect of any project requiring design. High Bridge offers a Conceptual Engineering & Estimate Package. This package includes conceptual design, a conceptual Class IV-V estimate, a constructability review, a schedule, and cash flow curves. The package can be customized or truncated at the client's request.



**Initial Conceptual Design** is the primary engineering component of this package. When complete, can be estimated.



The budgetary or conceptual **Class IV-V Estimate** includes WBS structure/cost reporting structure and aligns with client/market rates for wages and material. See pages 4-5.



The **Constructability Review** is performed by senior engineers, a distinction that sets High Bridge apart from the competition and sets clients up for success.



The **P6 Cost Loaded Schedule** correlates to the activities and costs shown in the estimate.



**Cash Flow Curves** for budgeting and forecasting adhere to industry standards and client preferences.

# Other Project Services

## MANAGEMENT, CONTROLS, & CONSULTING

#### **SELECTED EXAMPLES**

High Bridge Leadership	Facility Planning, Technology Screening, & Life Cycle Support: High Bridge is an industry leader in supporting owners/licensees with planning, scope development, risk assessment, & cost estimating for modifications, refurbishments, and decommissioning of power plants; we have been part of owner/licensee/project teams evaluating technology options & life cycle economics for LLWR, SMR, & Advanced Reactor Projects; and we have served as experts for ANS and IAEA.
Watts Bar #2	EPC Completion Planning & Project Management Support
ITER International Fusion Project	Planning, Scheduling, & Integration Support (France)
Sellafield Site	Standard Nuclear Performance Model Implementation (UK)
Entergy	Nuclear Fleet Sustainability Initiative, Planning & Management Support
URENCO LES Uranium Enrichment Plant	Planning & Construction Management
NiSource	Gas Capital Investment Program, Generation, Transmission, & Pipeline
Southern Company	Non Nuclear Fleet-Wide Project Controls Services
The B&W Company	Global Project Management Assessment
Dominion Power North Anna #3 NNP	Procurement Planning & Bid Evaluations



## **Our Clients**

At High Bridge, we value our clients — their business, their perspectives, and their insights.

High Bridge has supported clients on six continents with Nuclear, Fossil, Fusion and Science energy projects in the United States, Canada, Curacao, Australia, Italy, Japan, Spain, the UK, South Korea, China, South Africa, Austria, Sweden, Egypt and France.

In the United States, High Bridge has over 135 Clients in 37 States.

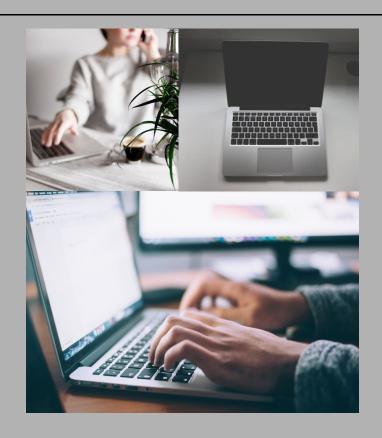
Since 2006, HBA has supported the ITER Organization, a major international collaboration in Cadarache, France with the aim of demonstrating the scientific and technical feasibility of fusion technology as a reliable and sustainable low carbon footprint energy source.

## STAFF AUGMENTATION & EXPERTISE

#### **ABOUT OUR SUPPORT SERVICES**

High Bridge has delivered staff augmentation and task managed services and served as owner's representative for managing the execution of engineering, construction, and operations for projects/programs of various sizes and complexity.

High Bridge principals have provided consulting and technical subject matter expert services to customers spanning cost estimating, cost reviews, schedule reviews, risk assessments, due diligence evaluations, feasibility studies, readiness assessments, expert witness services, contract change management and claims, technical assessments, and management assessments.





#### **Contact Us**

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