UTILITY COST MANAGEMENT— A STRATEGIC APPROACH*

As MCR first noted in 2023, utilities no longer enjoy the economic tailwinds that defined the pre-pandemic decade. Higher financing, material, and labor costs challenge the industry's ability to meet customer needs for secure energy delivery while keeping customer bill inflation in check and making needed infrastructure investments. U.S. residential electricity bills rose at a five-year compound annual growth rate of 4.6% between 2020 and 2024—up from 4.0% for 2019-2023. These competing pressures underscore the importance of strategically prioritizing and managing operating and capital costs across the utility enterprise.

The MCR Approach

MCR's proprietary cost management approach uses highly detailed process and workflow analysis defined by a strategic objective and best practices to maximize productive output while optimizing labor and capital resources. Through rigorous planning and budgeting, we guide utilities to objectively evaluate every expenditure for strategic alignment and risk tolerance, rather than simply basing current-year budgets on last year's numbers.

Leveraging AI

MCR now leverages custom built generative AI solutions to integrate advanced data analytics into our proprietary time-tested approach to utility cost management. AI helps MCR analyze vast amounts of data to identify patterns and trends, allowing for focused objectivity at an increased scale. AI also enables MCR to automate previously manual routine data analysis tasks and review large data sets expeditiously, freeing project time and resources for strategic feedback and

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**This is an update to the original March 2024 version of this paper*

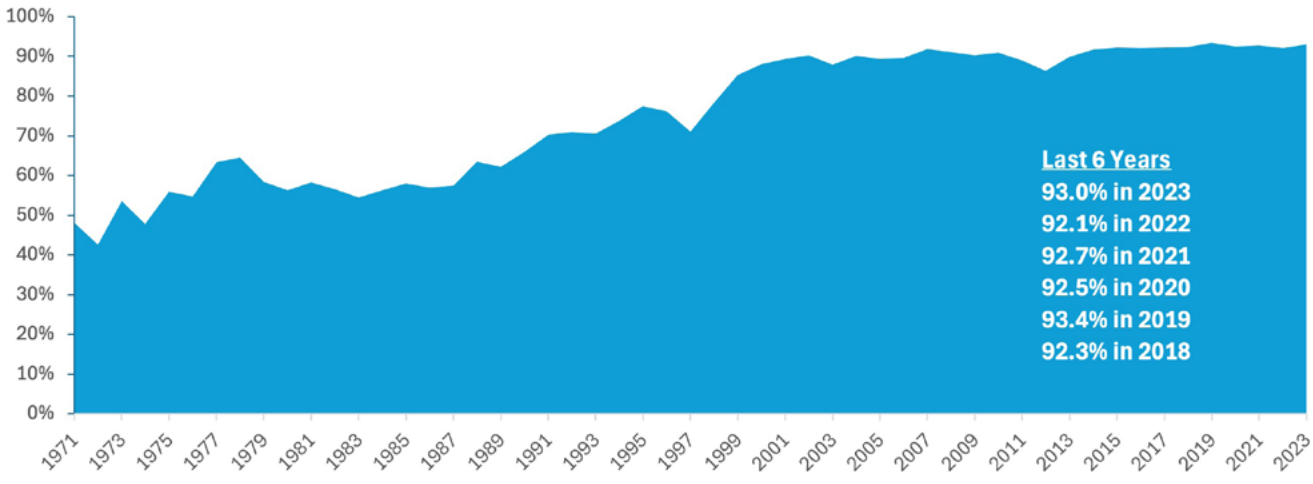
opportunity identification. These AI-enabled capabilities yield predictive insights and an enhanced final deliverable at reduced cost and improved efficiency. Integration of AI into MCR's cost management strategy unlocks new potential for increased performance for our utility clients.

Lessons Learned in the Nuclear Industry

MCR's proprietary approaches to advising clients on cost management originated with our advisory work for nuclear power plant operators. Nuclear plants have always been held to very high standards for safety and security. Their electricity production is highly reliable and resilient, attributes that are increasingly valuable as variable renewable electricity sources such as wind and solar have gained share. As cost management becomes increasingly important to utilities, the nuclear power industry offers decades of valuable learning experience.

Nuclear plants are large and highly capital-intensive assets with high fixed operating costs, challenging their ability to compete with often-cheaper solar and natural gas. As a result, nuclear operators, particularly in competitive electricity markets, are acutely aware of the need to manage costs, especially as many are being called on to extend operating licenses to sustain their production of around-the-clock, carbon-free power. While early U.S. commercial nuclear power often saw high costs and lackluster performance, the industry overcame those challenges in the past two decades, reaching fleet-wide capacity factors well above 20th-century levels, as illustrated in Chart 1.

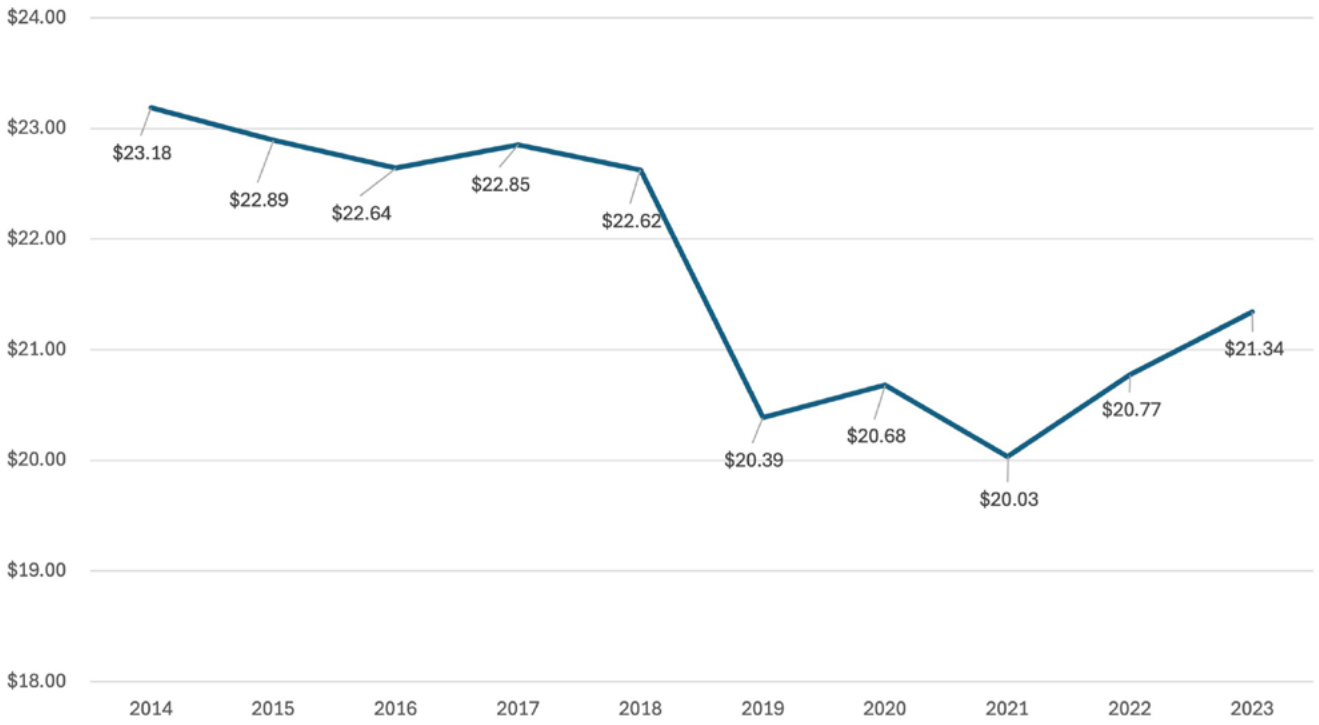
Chart 1: Fleet Capacity Factor (Power Generation as Percentage of Installed Megawatts)



Source: Nuclear Energy Institute

Productivity has also improved cost efficiency, expressed as production cost per megawatt-hour in Chart 2.

Chart 2: Average Nuclear Operating Cost per Megawatt-hour



Source: American Nuclear Society Utility Working Conference, 2024

Applying Nuclear Lessons to the Utility Enterprise

Similar to a large commercial aircraft, the economic viability of a nuclear plant depends on its actual productive use. A nuclear plant can only cover its high fixed costs while generating megawatt-hours of electricity. Unlike an airplane, which can move to a more profitable market, a power plant is a price-taker and can only improve its cost efficiency—and thereby its competitive position—by reducing operating and fuel costs (the numerator) or increasing its megawatt-hours of production (the denominator).

In many ways, a nuclear plant is a good proxy for a typical utility company that—absent merger or acquisition activity—has a defined service territory with revenues subject to state regulation. In the mid- to late 20th century, utility sales of kilowatt-hours and BTUs were driven by economic growth and new technologies such as air conditioning. Steadily upward-trending volume (the denominator) absorbed the investments and operating costs (the numerator), keeping the rate per kilowatt-hour or therm—in other words, customer bill inflation—in check.

Today, technologies such as AI, data processing, and transport electrification underpin electricity demand growth not seen since the post-World War II era. However, much higher standards for reliability and resilience, a (still) heightened level of environmental awareness, greater end-use energy efficiency, and

the need to protect economically vulnerable consumers all combine to challenge the simple math of the 20th century air conditioning era. Faced with higher financing, labor, and material costs, utility managers are increasingly likely to face challenges familiar to nuclear operators: upholding high standards of safety, reliability, and resilience while maintaining a keen focus on efficient and effective cost management.

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Setting Long-Term Cost Goals: The "North Star"

Achieving true and sustainable success involves transforming cost management from a one-off tactical exercise to implementation of strategic pillars. This approach, which MCR calls the "North Star," defines cost strategy over an extended period and incorporates key metrics measured against relevant peers and/or competitors. This leads to identification of cost gaps versus targets. At a higher level, an effective North Star effort calls for a cultural change and commitment to cost discipline, a transition that usually takes multiple budget cycles.

With targets established and cost gaps identified and communicated, specific strategic pillars can be initiated:

MCR's cost management advisory addresses these initiatives along three parallel paths:

Facility-Wide Cost Management *(Strategic Pillars 1-3)*

An effective cost management approach spans multiple areas:

- ***Risk-informed budgeting,*** an analytical approach to spending optimization, requires budget owners to justify all requests from a baseline of zero funding. This approach supplants the traditional baseline of the prior period's actual spending, instead challenging the status quo and requiring

justification of all requests. The process relies on peer reviews to inform adjustment and timing of expenditures and typically yields sustainable operations and maintenance cost reductions of 10% to 15% compared with a routine budgeting process.

- ***Staffing optimization*** develops a comprehensive understanding of key tasks performed, compares job descriptions to actual work performed, and monitors associated resource usage to better inform staffing and ensure the proper ratio of in-house vs. contract resources. This approach leads to actionable results with specific magnitude, timeline, assigned responsibility, and commitment. Potential actions include redeployment of resources, reclassification of job descriptions, termination of contracts, and increased support for company strategies and initiatives.
- ***Process improvement*** relies on an exhaustive examination of how work processes support overall long-range business planning and budget process integration. Using plant-level best practices documented over two decades and supported by industry standard processes, we thoroughly examine the organization's process implementation to identify and validate improvement opportunities. Capital and operating cost savings identified typically range from 10% to 25% of proposed budgets.

Project Evaluation and Portfolio Analysis: The Case for Business Cases *(Strategic Pillar 4)*

Budgeting and approval of utility projects can often be a middle-management exercise of "going through the motions" to justify planned expenditures. Functional areas and facilities compete for a fixed pot of dollars, and executives sign off on the budget without any real involvement in its planning and development. The resulting spending plan often lacks strategic context and does not take risk and cost-benefit analysis into account.

In MCR's experience, significant savings can be coupled with improved reliability and performance when project reviews are tied to strategic objectives through a robust business case evaluation process. The process involves senior management in financial and risk analysis and incorporates prioritization of needs throughout. The returns can be substantial: For six projects, MCR's experience implementing this process has led to over $160 million of savings across $309 million of total project value, as shown in Chart 3, with no degradation in safety or reliability.

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Chart 3: Results of MCR Project Evaluation Process

PROJECT	TOTAL VALUE REVIEWED ($K)[1]	TOTAL SAVINGS ON REVIEWED ($K)	% SAVINGS
480 Volt Breaker Replacements	$13,500	$11,200	83%
Critical Capital Spares Evaluation	$187,500	$103,300	55%
Environmental Qualification	$21,900	$6,000	27%
Full Flow Condensate Polisher Upgrade	$10,500	$4,100	39%
Security System Upgrade	$18,100	$6,400	35%
Spare Main Generator Step-Up Transformer	$57,500	$32,800	57%
Total	**$309,000**	**$163,800**	**53%**

[1] *Total proposed spending was latest estimate prior to MCR arrival*

Source: Actual MCR client results

MCR applies a risk-based valuation approach to score and prioritize individual projects according to their cost-effectiveness and alignment with overall business planning and strategy. MCR works with client staff to develop business cases for selected projects. Each business case identifies alternatives and quantifies risk through sensitivity, break-even, and probabilistic risk analyses. Engagements typically result in savings greater than 20% of the originally budgeted amounts—often exceeding the consulting fee by a factor of 40.

Informing Capitalization vs. Expense Decisions *(Strategic Pillar 5)*

Capitalization decisions tend to lack uniformity and consistency across the industry and even within organizations and companies, often leading to time-consuming budget classification decisions. Leveraging consistent and objective standards for capitalization vs. expense classification—benchmarked to industry best practices—improves financial accuracy and streamlines processes and audits.

Utility companies can realize several key benefits through an improved capitalization process and units-of-property catalog review:

- Crucial field operation guidance provided with reduced resources and time spent on asset accounting
- Improved financial accuracy resulting from sufficient detail and alignment with industry best practices
- Better-informed capitalization decision-making on equipment and component replacement

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The MCR units-of-property catalog and best practices database solve the capitalization decision problem by compiling and leveraging industry knowledge to enable utilities to benchmark their capitalization policies and thresholds against peer companies. This approach is easily customized and designed to meet the requirements of auditors and regulators.

Summary

While interest rates and inflation are arguably growing at a slower pace, upward pressure remains and there is evidence of regulatory and political sensitivity to increasing utility rates, particularly for lower- to moderate-income consumers. At the same time, utilities need to invest in infrastructure to continue improving reliability and resilience, meet changing consumer demands, and address safety and environmental concerns. Balancing these competing demands while sustaining attractive returns on investor capital can't be achieved through the traditional, across-the board "belt-tightening." An approach informed by data and intelligence can align spending with strategic priorities to drive not only cost savings but better overall performance for all utility stakeholders.

Speaking at the June 3 session of the EEI 2025 conference, Safra Catz, CEO of Oracle, challenged utility managers: "You've been consistent. You've been dependable. Now you're being asked to be bold."

In 20 years of advisory work for nuclear plant operators, MCR has developed a proprietary and intelligent approach to cost management based on a comprehensive, strategically informed process to prioritize operating and capital expenditures by risk and return. MCR leverages considerable experience in the nuclear power industry to provide our utility clients a robust analytical approach to budgeting and capital allocation. No other management consultancy can match our decades of experience, technical proficiency, and success in utility cost management.

MCR has saved our clients billions of dollars in direct cost reductions and avoided or significantly delayed costs. Our projects pay for themselves many times over.

If the topics discussed in this paper ring true to you, contact our industry experts, Sam Brothwell or Tim Schlimpert, to set up a time to discuss your challenges (see contact information on next page). MCR can conduct a no-cost assessment to evaluate your areas for improvement and propose a way forward to achieve your performance objectives.

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Tim Schlimpert, Vice President, leads MCR's Nuclear Consulting Services practice. He brings more than 30 years' experience in nuclear power plant operations, maintenance, work control and business processes to achieve significant performance improvements with his utility industry clients. Tim provides the often-elusive connection between corporate strategy, long-range planning/budgeting, work management and engineering through industry-leading life cycle management practices. Prior to MCR, Tim held the following positions: Outage Manager/Work Week Manager/Senior Instrument Technician – DC Cook Nuclear Plant and Submarine Nuclear Propulsion Plant Operations, Maintenance and Training Supervisor: Reactor Controls – US Navy. Tim received a Master of Business Administration degree, Cum Laude, from the University of Notre Dame and a Master's Certificate in Project Management from Villanova University.

Sam Brothwell, Vice President, heads MCR's Strategic and Financial Advisory practice. He has nearly four decades of experience in the utility and energy industries, including accounting and tax, financial modeling and planning, investor relations, and corporate strategy. Sam's two decades on Wall Street include equity and credit financial analysis and investment recommendation across electric and natural gas utilities, pipelines, upstream energy, and renewables. He has testified before the Federal Energy Regulatory Commission and counseled company senior management teams and board members. Sam previously held positions at Energy Income Partners, Bloomberg, Questar Corporation, Wells Fargo, Merrill Lynch, Moody's Investors Service, and Public Service Company of New Mexico. He holds a CPA certificate and a Bachelor of Business Administration from the University of New Mexico.

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