

# RUDDEN'S ENERGY STRATEGIES REPORT

Providing valuable strategic insights to the energy industry

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## Succinct Survey

This past spring, the Pew Research Center surveyed two groups: ordinary adults and members of the American Association for the Advancement of Science (AAAS), possibly the largest and most prestigious scientific trade organization in the world<sup>1</sup>. The scientists were more liberal, more likely to be Democrats, unhappy about our last president's renewable energy and climate change policies, but get this:

Support for more nuclear power plants:

Scientists	70%
Public at large	52%

Maybe this says more about the communications skills of the nuclear industry than anything else. Maybe only scientists understand them.

### Coal Almost Under the Arch And Right Next to Busch Stadium

The American Coal Council (ACC) 2009 Fuel Flexibility Conference was held in St. Louis, a few blocks from the HQ of Peabody Energy, the world's largest coal producer. When I was asked to talk to them about what the economic downturn would do to coal-fired generation, my first response was: "They're asking me to speak? What could I tell them?"<sup>2</sup>

The whole business reminded me of the story about the rabbi, back in a little town in Eastern Europe. He was walking down the market street with his assistant,

when, all of a sudden, one of his congregants, Mr. Goldberg, dropped dead in the street. The rabbi said to his assistant, "You'd better go tell Mrs. Goldberg, but break it to her gently." The assistant nodded. "I get it, break it to her gently." So he went to the Goldberg home, knocked on the door, a woman opened it, and he asked her, "Are you the widow Goldberg?" To which she replied, "This is the Goldberg residence, but I'm not a widow." And he retorted, "You wanna bet?"

It turned out, though, that many of the coal industry people were more bearish than I about their prospects. Here's what I heard:

- A mining engineer said that Energy Information Administration (EIA) estimates for production and price were timely but inaccurate. The U. S. Geological Survey is reevaluating reserve data. Forget about the "Saudi Arabia of coal" routine, with the 250-year supply. Nobody will find another Powder River Basin. The coal game will change within 20 to 40 years.
- In 2007, the U.S. Supreme Court said that the Environmental Protection Agency (EPA) could regulate CO<sub>2</sub> emissions from motor vehicles. In 2008, the Bush administration's EPA said that the Clean Air Act was unsuited to regulate greenhouse gases. In 2009, with the Obama administration in place, the government argued that greenhouse gases endangered public health and welfare. Some industries support legislation because they want to avoid EPA control and a patchwork of state rules, they need certainty, and they are getting tired of fighting, and would like to move on.

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<sup>1</sup> Jeffrey Mervis, "An Inside/Outside View of U.S. Science," *Science*, July 10, 2009. p. 132

<sup>2</sup> Leonard S. Hyman, CFA, "The Economic Downturn and a Lot More: Implications for Coal-Fired Generation," presented to 2009 Fuel Flexibility Conference, St. Louis, MO, June 23, 2009.

- Expect more attention to the water/energy nexus. Congress could extend Federal jurisdiction to all waters. That could affect mountain top mining. The EPA is taking a close look at all Corps of Engineers projects.
- By 2020, coal production could be down to 140 million tons (12% below 2007 levels). The new climate change legislation effectively desejects coal from the energy portfolio.

Here's a different view: practical realities will prevail and policy makers will find it next to impossible to reach their goals. Existing coal-fired power plants will operate for a long time, and their owners need to manage them better, make them more flexible. Plants that can buy and burn a variety of coals will have a competitive advantage, since all coal prices do not move in unison and all railroads don't run out of capacity at the same time.

When things get tight, the coal and rail industries don't have the shock absorbers of excess capacity that they had before. In the summer of 2008, there was no spare coal production, worldwide; Appalachian coal was tapped out, the railroad network was congested and utilities put in scrubbers since they couldn't get the low-sulfur coal that they needed. Now, there is excess production everywhere, Central Appalachian coal sells below its production cost (which will wipe out capacity there), and natural gas is cheaper than coal for electricity dispatch. Railroads have capacity. Coal stockpiles are high. Fuel flexibility allows the generator to take advantage of those changes in circumstances or to protect itself from price volatility caused by changing circumstances.

The price decline for coal will lead to consolidation within the industry, which will lead to more pricing power for the survivors. This means that coal-burning utilities need to make the changes in their plants that will allow them to burn a variety of coals and increase their bargaining power with domestic suppliers by creating the ability – and the threat -- to import coal. The power companies should take action now when cost of failure is low. The coal industry is moving from an era of not quite dead to one of not yet alive.



## Surviving the Crash & Burn Economy

A global recession is upon us. Equity values of financial institutions have evaporated rapidly; credit availability is highly constrained and expensive when it can be obtained. These prevailing economic conditions have had a profound effect on all markets and sectors within markets resulting in reduced gross domestic product, markedly higher unemployment in every industrialized country, and a corresponding reduction in energy demand. All of the above issues are touched on in the content of a white paper authored by the Editor-in Chief or the Rudden Energy Reports.

*“Surviving the Crash & Burn Economy – Strategic Directions in the Electric Utilities Industry “*

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**Information tidbits:** A nine percentage point increase in net plant efficiency of a coal-fired power plant reduces CO<sub>2</sub> output by 20%:

Type of coal plant	Efficiency	CO <sub>2</sub> index
Subcritical	38%	100
Supercritical	41%	91
Advanced supercritical	47%	80

RWE of Germany is building a coal-fired power plant with 50% efficiency.

**Comment:** Industry associations typically try to put on feel-good meetings that tell the attendees what they want to hear. When the industry of choice faces serious challenges, the trade associations often promote a mass psychosis of collective denial or a siege mentality. The ACC conference surprised me. The industry has big problems, no denying that. The overall message at the meeting was “What do we do,” as opposed to “whom do we lobby?” (The ACC doesn’t lobby.) I didn’t have to sneak out of the meeting in disguise after I delivered my speech. They knew already.

## Water Drips

The environmentalist said that the water running down the stream after a month of rain was too clear and cold to be stormwater runoff. “Every other stream looks like coffee. . . . Clear and cold sounds like drinking water to me.”<sup>1</sup> He figured that it came from the Delaware Aqueduct, a major component of New York City’s water supply. It turns out that the Delaware Aqueduct has been leaking 36 million gallons per day from two spots since 1988. The city’s system delivers more than 1.1 billion gallons per day, so those leaks are of consequence. The leaks also cost the city \$27 million per year. But there’s another worry. Some people claim that “only the pressure of the water through the pipe may be keeping it from collapsing.”<sup>2</sup> Did the Romans have those problems when they built aqueducts? The Delaware Aqueduct, after all, is only about 80 years old. Apparently, they don’t build them the way they used to.



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<sup>1</sup> Greg Clary, “Water, Safety Issues Arise,” *The Journal News*, July 5, 2009, p. 1

<sup>2</sup> Op cit, Clary 8A



## United Utilities North American Tour

United Utilities started life as a water company in northwestern England. Then the company became one of the first “multi-utilities.” (Remember them?) It purchased a nearby electric utility and went into the telecom business, and then began to sell multiple products to the same customers. After a while, management discovered that they earned a slim margin on consumer sales and a big margin on utility revenues. So, United moved out of the cross selling business and got into the management of operations and services business (outsourcing). Then the company sold all the outsourcing (except to other utilities), sold the electric utility, and gave the proceeds back to shareholders in the form of a big dividend. Now, the slimmed down United Utilities makes 90% of its profit from the water and wastewater utility, and 10% from services to other utilities. The company may sell that service business, too.

Management, talking to North American investors, says that the market looks at three things: the dividend (yield in the 6% to 7% range), the capital expenditure program (growth derives from return on new investment made to serve customers, rehabilitate old plant and meet environmental standards) and the regulatory review that will set the return on investment for the coming five years.

The company made its proposals, the regulator just announced initial thoughts about the finding, discussions will take place between company and regulator, and the order comes in November.

The uncertainties of the current market and of the pricing determination (regulators’ initial comments were tougher than expected) probably weigh on United Utilities’ stock, whose dividend yield exceeds 6%, possibly reflecting worries about continuation of the dividend at current levels. The stock sells at a single digit price/earnings ratio and, in addition, at roughly the value of regulatory assets on which the regulator sets the return. The returns being considered, translated into American, work out to roughly 10% on equity. But, remember this about UK regulation: If the utility can find ways to operate more efficiently than the regulator estimates, it can keep the extra profits.

So, why do U.S. water utilities, often earning lower returns, without the inflation protection built into the U.K. pricing procedure, sell at higher prices in the market? Scarcity value? Takeover value above market value? Certainly not a glamorous growth business. I could never figure that out.



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The Black & Veatch Cyber Security Management service includes: (1) Utilizing subject matter specialists to identify critical assets and to understand the parameters used to classify assets, (2) Performs a vulnerability assessment on existing assets, (3) Provides specific feedback and mitigation recommendations on all deficiencies and helps develop and deploy a policy to meet or exceed NERC CIP guidelines, (4) Offers insight on how to maintain a holistic view of protection for all of the enterprise’s critical cyber assets, (5) Creates a roadmap for establishing and maintaining a robust security initiative and an ongoing readiness culture throughout the organization, (6) Addresses the cyber, physical and human resource aspects of compliance along with documentation, incident reporting and ongoing maintenance.

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## Transmission School Notes

Every year in Chicago, George Gross of the University of Illinois Urbana-Champaign (UIUC to everyone in the Land of Lincoln) puts a group of professionals through several days of rigorous examination of the electric transmission sector. The faculty comes from all over. They have practical experience. They speak frankly. Notes from the classroom follow with no names attached.

### Models and Markets

- Markets work but market power is a problem not anticipated by the planners. Forced divestiture of power plants was a mistaken way to address market power. Demand response will grow. Demand response is a key antidote to market power.
- The United States favors centralized power markets. The system operator dispatches power plants, and the market operator is the system operator. In a decentralized model, every party deals with its own constraints. The grid company handles reliability. The U.S. requires a day-ahead market because many plants require 12 hours to start up. In Norway, hydro generation can start up in one to two hours.
- Here's one view of dealing with price manipulation in two ways: If manipulation is suspected, X ISO looks into it; Y ISO, says you are guilty. (You can fill in the names.)
- The transmission company model is used elsewhere. The company owns and operates the transmission network, so it will look for a transmission solution. The ISO has many solutions. ISOs, however, are bureaucracies. They don't own any assets, control distribution systems, follow rules strictly and allow little discretion to operators. ISOs tend to overproduce.
- Unanticipated developments: What happened that the policy makers didn't expect when they restructured the electric industry? Lots of things. Retail now lacks importance. Demand-side management makes little impact. The effect of market power was underestimated. A need for rate caps develops. The power of the ISOs was unexpected. Risk management is a major problem. Markets are complicated. Prices are volatile. Vertical disintegration did not have the desired results. Players gamed the market.



### Black & Veatch Helps Energy Utilities Manage Regulatory Risks

Managing the risks associated with regulatory uncertainty and with the filing of rate cases following a long period of rate freeze have become increasingly important. The experts at EMS have assisted in hundreds of cases. The following papers are available:

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### **Odd Comments**

The Fourth Circuit U.S. Court of Appeals neutered the national transmission corridor concept when it said that if the state denies (not delays) the corridor, the builder of the line cannot go to the Feds to rescue the project.

You can't build a transmission line one wind plant at a time.

### **Integrating Renewables**

In New York, wind forecasting takes place at each plant. Real-time forecasting error (15 minutes ahead) is less than 5%, and day-ahead about 12%. Wind runs at a 10% capacity factor on average, but good plants run at 30%. Wind is on dispatch in New York.

Smart grid has so many stakeholders that nothing seems to move.

Don't expect automobiles to sell electricity to the grid. The manufacturers don't want to put the needed intelligence into the battery.

### **Incentives and Planning**

FERC is looking into ways to make regional transmission organizations (RTO) responsive to customers.

FERC does not want to use transmission authority. Transmission planning has become more difficult, but there are some benefits. RTOs, for instance, can look at a big region.

The PJM Interconnection has a big project to bring cheap coal-fired power to the East. What happens to the economics of that project when CO<sub>2</sub> gets priced?

Merchant transmission lines don't really get built to collect the locational marginal price differential, but depend on contracts for capacity.

### **Energy Trading**

There is not much program trading in energy. Generation is starting to look like the airline business. (Think of excess capacity, often in the wrong place; shaky financials; bankruptcies; mergers. What a comparison!)

People don't want to commit capital without contracts. The biggest challenge is liquidity beyond two years. In the natural gas market, in contrast, one can do transactions out five to seven years, after which the market is less liquid. Generators want to hedge but there are few buyers for such hedges.

### **Carbon Markets**

It is easy to target coal-fired power plants. They are stationary. The impact of carbon regulation on prices depends on the power plant at the margin. Agriculture can furnish carbon offsets (such as from no-till farming). Allocating carbon credits to merchant generators gives them windfall profits. Significant transmission infrastructure is required for renewables. Without transmission siting, it will be difficult to meet renewable targets.

### **Comment**

"Uncoordinated" seems to be the best adjective to describe the transmission sector. One government agency wants more renewables, while other government agencies hinder their transmission. Some agencies want the market to signal what long-term investments are required, but the market won't pay for more than a few years of output. If a government agency will not allow one activity that is okay, but if it delays the activity that is not

acceptable. The market supervisor wants to transport coal-fired power because it is cheap while Congress wants to make it less cheap. Do we have a market or a transmission policy, or neither?

## Financial Corner

Five years ago, Wall Streeters caved in to the demands of New York's then-attorney general (and later, short-term governor) Eliot Spitzer. They would no longer fund investment research with money from investment banking activities and they would fund independent research for their clients for a period of five years. The plan would remove the conflicts of interest that plagued investment research on Wall Street. The results, after five years:<sup>3</sup>

- Stock selections have improved.
- Research budgets have declined.
- Nobody knows whether and for how long the brokerage houses will continue to support independent research.

What does this mean for your company? If you work for a big one, don't worry. The researchers will continue to pay attention. The small companies, which depend on small or local brokers that might not survive the downturn or on independent research firms that might lose their distribution if the brokers stop buying their research, may find that they get less attention than before. Those small or neglected companies will have to learn the art of investor relations, and find and cultivate the kind of investor that likes those sorts of companies. Capital intensive companies, no matter their size, need to keep investors interested. At some point they will need money from investors.

However, for all companies, the next round of changes on Wall Street could lead to fewer firms and fewer analysts following the company, and even more superficial research by analytic staffs spread too thin. Investor relations people will have to work harder to get the story out. You've planned for the hurricane. You've planned for the fuel strike. You've planned for cyber attacks. Have you planned for no coverage of your stock?

## We Value Your Patronage...

A British consultant, John Seddon, said of call centers: "So many of these systems manage activity, without understanding why people call..." He described many call systems as "manager-facing," meaning that the call center people worry more about fulfilling set requirements than solving the customer's problem. Everyone focuses on target numbers and, as another consultant, Russ Ackoff, put it, the employees work hard to "do the wrong thing righter."<sup>4</sup>

Have you called your call center lately? Can you understand the language spoken by the call center employees? How long did you wait before a human answered? Did you like the musical selections while you waited? I once called the IRS to get an explanation for one of those mysterious billings. The IRS valued my patronage, the voice told me as she put me on a long hold, although I couldn't figure out why the IRS tried to pretend it was customer friendly. Could I have paid my taxes to a rival IRS? My cable company, Cablevision, takes forever to answer, but the people at the other end seem genuinely interested in solving my problem, and take the time to do so. Not only does GEICO answer quickly, but the person answering acts as if I am a long lost

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<sup>3</sup> Lori Pizzani, "Settling Down," *CFA Magazine*, April 2009, p. 41.

<sup>4</sup> Stefan Stern, "Hanging on the Telephone? Change the Way You Work," *Financial Times*, July 28, 2009, p. 8.



relative or, maybe, as if Warren Buffet were listening. I call my electric company to tell it when the lights have gone out. There's no wait there. I speak to a machine. I call the village police station to find out what happened, and what I should expect. Real people answer the phone at the police station. Fortunately.

## **“The Purcell Imperative” and Other Tales of Risks, Rewards and Incentives**

Long ago, during another market panic, my then-employer was asked to lead a public offering for the stock of a company it had helped found. The bankers looked at the situation and said, “In this market, your stock is worth \$12, and that’s the price at which we will offer it.” The company’s management replied that another banker said that the stock was worth \$18, and the other broker would get the business. We lost the deal. Then the other broker, having been hired, told the management that market conditions had changed, and investors would not pay more than \$12 for the stock. Bait and switch? Whatever the motivation, we told the truth and lost the deal for doing so.

Richard X. Bove, a well-known bank stock analyst, wrote a different story about what he calls the “Purcell Imperative, which explains why managements get punished for avoiding risks and rewarded for taking them.”<sup>5</sup> Phil Purcell used to run Morgan Stanley. He realized the risk inherent in some of the exotic financial instruments and, according to Mr. Bove, he acted cautiously, didn’t make the plunge into those securities and “He was fired for underperformance.”<sup>6</sup> In contrast, the analyst cites the cases of three firms whose CEOs did bet the ranch on the exciting stuff. One of the firms went bankrupt, and the other two sold out the firms under pressure, at minimal prices, and each of the deposed trio walked off with a bundle.

In my first job, at a leading trust bank, I recommended a conservative electric stock that would, I thought, not only pay an above average dividend but also grow at 6% to 8% per year. Another analyst, at the same investment committee meeting, recommended a company in an exciting industry that would, he said, grow at 20% per year, although it paid only a minimal dividend. The committee rated the second stock a buy, not my recommendation. Everyone bought the second stock. The analyst who made the recommendation and his boss both were promoted. The stock fell 90%, and my employer had to remove it from customer portfolios because the portfolio managers got tired of answering questions about the stock. The exotic stock analyst and his boss went on to better jobs.

Each tale tells about imperfections in the market, no reward for telling the truth, reward for doing whatever everyone else does, and inability to focus on the relationship between risk and reward. In other words, you might be rewarded in heaven for your honesty or prudence, but not in the capitalist marketplace, or, “No good deed goes unpunished”? Then again, how about *caveat emptor*?

Rather than getting into philosophical or quasi religious analyses, try this instead: the parties involved did not think in terms of risk-adjusted rewards. The company selling the stock could have demanded a price assurance from the banker, which the banker would not have granted, because the banker would not have wanted to take that sort of risk. Let the client take the risk, and let the banker collect the fee no matter what the price.

The board of directors that eases out the cautious executive to put in one who will make a bundle on stock options if the new high risk strategy works, doesn’t understand the incentives offered by allowing someone to

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<sup>5</sup> Richard X. Bove, “Regions Financial”, January 25, 2009, Ladenburg Thalman, p. 1.

<sup>6</sup> Ibid.

gamble with shareholders' -- not their own -- money. (Does it happen at utilities, too? For sure. I can think of at least four ultra-solid companies whose directors felt that the next CEO had to take a more adventurous stance than the predecessor or the old fogey next in line who didn't get the promotion to CEO. The new CEO managed to wreck the company in every case.)

Investment firms that pay their employees on the basis of return earned, rather than risk-adjusted return, encourage their employees to gamble their client's money. Bankers who pay traders on the basis of profits encourage the traders to gamble with stockholders' money. (That's why some people have, seriously, suggested a return to the partnership as the basic business structure for trading vehicles. Partners who can lose their own money might act differently than executives who lose shareholders' money.)

In case you didn't notice, these issues played out in a big way in the recent financial crash. They have not gone away. And they apply to all sorts of businesses and decisions.

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## The Classifieds

### **Black & Veatch Releases Results of 2008 U.S. Electric Utilities Survey**

Black & Veatch, a leading global engineering, consulting and construction company released the results of its third annual "Strategic Directions in the Electric Utility Industry" survey showing system reliability, aging workforce and infrastructure among the top concerns. The 2008 report identifies issues and concerns on the minds of U.S. power industry leaders. Also, this year's survey includes a detailed look at the acceptance and implementation plans for demand-side management and energy-efficiency programs. "The survey results reflect the realities and concerns within today's electric utilities industry," said Richard Rudden, senior vice president in Black & Veatch's Enterprise Management Solutions Division, and the executive sponsor for the survey. "The results show that the industry continues to be most concerned about system reliability, the aging work force and infrastructure, environment, and fuel policy." The full survey can be accessed at:

[www.bv.com/strategicdirectionssurvey](http://www.bv.com/strategicdirectionssurvey).

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## LEONARD HYMAN PRESENTATIONS

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"Back to Basics or Forward to Basics" -- Presented to the EPRI Power Delivery and Markets Council; March 6, 2003.

"Financial Crisis in the Electric Power Industry or What Else is New?" -- Presented to the Northeast Energy and Commerce Association; March 6, 2003.

"Let's Talk About What's Important or Where the Electricity Industry May or May Not be Heading" -- Presented to the Energy Bar Association; March 13, 2003.

"Risk Management" -- Presented to Global Power 2003 Conference; New Orleans, Louisiana; March 31, 2003.

"May Day in Houston or How the Energy Industry Has Changed" -- Presented to Acquiring Distressed Energy Assets Conference; May 1, 2003.

"The Next Big Crunch Is Not The Latest Export From Hershey, PA" -- Presented at the Energy Association of Pennsylvania Annual Conference; May 30, 2003.

"Finance, Commerce and Reliability" -- Presented to Northeast Power Conference; June 24, 2003.

"Would a Sane Person Invest in Electric Technology in the U.S.A.?" -- Presented at NARUC Winter Meeting; March 9, 2004.

"T&D Redux" -- Presented to the Committee on Power Delivery, Association of Edison Illuminating Companies; March 25, 2004.

"Just the Facts, Ma'am" -- Presented to the Conference on Understanding and Managing Business Risk in the Electric Sector (UMBRES); April 15, 2004.

"Building the Transmission Network: Past, Present, Future or Maybe Never" -- Presented to the T&D World Expo; May 27, 2003.

"The Heart of the Matter or Foundation Flaws Fell Feeble Fixes" -- Presented to the ELCON Member Meetings in the Big Easy; June 21, 2005.

"Wires as a Business, or If the Network is the Answer, What is the Question?" -- Prepared for International Grid Conference; Toronto, Canada; 15 June 2006.

"How Wall Street Views Electric Utilities of the Future" -- Presented to RMEL Fall Convention; San Antonio, Texas; 12 September 2006.

"Reliability for Whom or Cui Bono?" -- Presented to the Chartwell Reliability Summit; Atlanta, Georgia; 8 March 2007.

"The Ten Challenges/Issues/Opportunities/Roadblocks/Requirements to Ensure that the Electricity Supply Industry Has the Physical and Human Resources Needed for the Next Thirty Years" -- Presented to the Third Annual Carnegie Mellon Conference on the Electricity Industry; Pittsburgh, Pennsylvania; 13 March 2007.

"Notes on Electricity Restructuring: What Did Customers Get From It?" Presented to Gulf Coast Power Association; Spring Conference; The Woodlands, TX; 5 April 2007.

"Random Thoughts on Picking the Sample of Comparable Firms for the Rate Case," Presented to Society of Utility and Regulatory Financial Analysts (SURFA) 39th Financial Forum; Washington, DC; 19 April 2007.

"Aligning Rewards to Risks and Responsibilities and Other Random Thoughts Relevant to Planning," Presented to Power Systems Engineering Research Center Executive Forum: Planning, Markets and Investment; 7 March 2008.

"A Business-Like Approach to Electricity Policy," Presented to United Kingdom Energy Research Centre; 9 and 10 July 2008.

## LEONARD HYMAN ARTICLES

A list of Mr. Hyman's most recent articles are cited below. To obtain a copy, please direct your request via e-mail to [petersondl@bv.com](mailto:petersondl@bv.com).

"The Return of Plain Vanilla or Maybe the Worm Turns"	"The Customer is Always Right"
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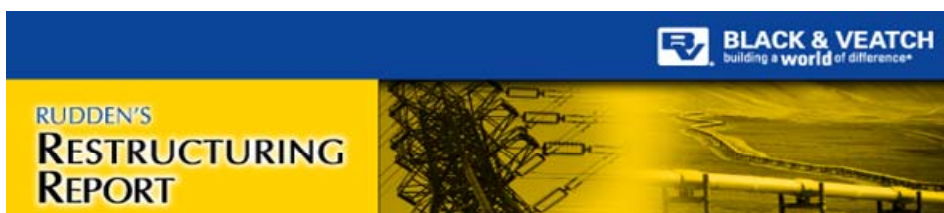
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