2010 Sustainability Survey of AEP Coal Suppliers
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INTRODUCTION

In 2010, American Electric Power (AEP) conducted its second annual Sustainability Survey of Coal Suppliers (Survey) to assess safety, health and environmental performance. AEP commissioned a third party to survey 31 coal suppliers. Of those, 14 suppliers responded, providing data for 52 mines and 10 facilities (preparation plants and loadouts), representing operations in five of the six major coal producing regions in the United States. The respondents produced 365 million tons in 2009, approximately one-third of the total coal mined in this country.

Some key findings include general improvements to safety and health performance in 2009 (the year for which data were collected), with some exceptions. It also shows that a majority of respondents report programs that include training, job safety analysis programs, risk assessments, and wellness programs. Safety and health performance is much easier to benchmark because of the national database that is available through the Mining Safety and Health Administration (MSHA). However, the lack of a comparable environmental performance database limits our ability to benchmark environmental performance. The best analysis we can provide is based on the data collected through this Survey each year. In addition, while only two suppliers submitted sustainability reports, additional suppliers have acknowledged plans to develop such reports in the near future.

The AEP Sustainability Survey of Coal Suppliers is the only known survey of the coal industry that reflects an assessment of one-third of the coal that is mined in the United States. The broad reach of this Survey to include a large portion of the nation's mining community gives important insights into the environmental, safety and health performance of the coal industry.

This report presents the background, design, content, and results of the 2010 Survey. The results contained within the report are a compilation and analysis of the data that were submitted. Development, implementation, and management of the Survey required input from various groups within AEP. Coal Mining Consulting Service (CMCS) was hired as a contractor to assist AEP with the
Survey design, data collection and analysis, and drafting the Survey report. CMCS has considerable experience in safety, health and environmental work in the coal industry. Preliminary results from this year’s Survey were presented at a meeting of stakeholders held at AEP corporate headquarters on December 16, 2010.

This report does not divulge specific details for any one coal supplier, as anonymity was a condition provided to the suppliers for their participation in the AEP Survey. Participation in the Survey was voluntary. A significant portion of the data collected was from public sources available through the MSHA. The remainder of the data not available through public records, such as environmental performance data, we’ve supplied by the coal suppliers at their discretion. The Survey collected both numeric and textual data. The textual data does not lend itself to statistical analysis but such data do provide important information used to evaluate and examine policies and programs suppliers have in place regarding safety, health and environmental performance.

Numeric data are used to evaluate the statistical performance of the suppliers in comparison to their peer groups. Peer groups are established on mine type -- underground or surface. A comparison within each of the peer groups allows for the determination of those suppliers who perform better than the average for AEP suppliers (“positive outliers”) and those that perform below the average for AEP suppliers (“negative outliers”). A table at the end of this report summarizes the criteria used for determining the outliers and how many outlier mines exist for each performance parameter. Follow-up communications were conducted with the outliers. The intention of such communication is to learn and share best practices and to help drive the safety performance to a higher standard for the mines supplying coal to AEP.

COMMISSIONING

AEP’s commitment to the Survey is motivated by its overall corporate dedication to sustainability.

The 2008 AEP Corporate Sustainability Report discussed AEP’s actions and plans for developing a sustainable supply chain, and in particular, working with its coal suppliers.

In 2009, AEP committed to establishing criteria to evaluate the safety, health and environmental performance of its coal suppliers; the Survey was the result of this commitment. AEP believes this survey process will help its suppliers better evaluate the social aspects of coal mining and result in a more informed decision-making process.

The 2010 AEP Corporate Accountability Report defines AEP’s commitment to sustainability as:

“We held an unprecedented stakeholder meeting on coal issues and the environmental, safety and health performance of our coal suppliers in 2009 as we brought together 10 coal suppliers, environmental groups, regulators and community leaders. The meeting was based on a supplier survey we conducted, but much of the conversation also focused on mountaintop removal mining.”

This continued commitment to sustainability is the driver behind the 2010 Survey; the stakeholder meetings further demonstrate this commitment.
GLOBAL REPORTING INITIATIVE

AEP uses the Global Reporting Initiative (GRI) framework for reporting its sustainability performance. AEP reports on more than 100 performance indicators each year. Although GRI is a broad framework, AEP also reports on indicators specific to its industry. In gathering the data from our coal suppliers, AEP is attempting to be consistent in its reporting and data collection process. Therefore, some of the questions in the Survey come from GRI’s Mining and Metals Sector Supplement (MMSS).

The GRI began in 1997 as a joint initiative of the Coalition for Environmentally Responsible Economies (CERES), a nongovernmental organization, and the United Nations. The intent was to provide guidance that would enhance the quality, rigor, and utilization of sustainability reporting internationally. Today, the electric utility sector is the second largest sector that reports using the GRI framework. GRI, or G3, is the most universally accepted and used framework for sustainability performance reporting in the world. Although there are other tools, most companies and organizations subscribe to the G3.

AEP integrates some indicators from the GRI’s Mining and Metals Sector Supplement to allow for comparability. This is an established framework that lends credibility to the Survey.

Although this is a diverse sector with a wide range of different business types and models, these guidelines give sustainability reporters an opportunity to describe their own scope of operation. The performance indicators developed for this sector focus on issues such as the control, use, and management of land; the contribution of a mining operation to national economic and social development; labor relations; community and stakeholder engagement; and environmental management. AEP believes these are relevant to helping us better understand some of the issues we are frequently asked about regarding mining operations and address the expectation that AEP can influence such operations in a more comprehensive manner.

A matrix of applicable reporting guidelines was included in the Survey.

DESIGN MECHANICS

For the 2010 Survey, AEP chose to use the same commercial survey software that was used for the 2009 Survey. Changes were made to this year's Survey to make it easier for the suppliers to respond and to help in clarifying several of the questions and data being sought. Knowledge gained in 2009 and feedback from some of AEP’s coal suppliers were helpful in this modification process. One significant change to the 2010 Survey was AEP’s choice to compile the requested safety and health information for each mine from the public data available through the Mine Safety and Health Administration’s Data Retrieval System (DRS).

The 2010 Survey was preceded by correspondence from Michael G. Morris, chairman, president, and chief executive officer of AEP, to the coal suppliers, along with a copy of the final report of the 2009 Sustainability Survey. The design, implementation, analysis and report of the 2010 Survey was a joint effort of the AEP Fuel, Emission and Logistics group, the AEP Corporate Sustainability staff, and CMCS.
SURVEY AND RESULTS

INTRODUCTORY INFORMATION

The beginning pages of the Survey contain background and introductory information. We recognize some of the individuals completing the Survey may not be familiar with the GRI and sustainability reporting. General information on GRI and matrices for the Mining and Metals Sector Supplement of the GRI model, and guidance and instructions for completing the Survey, were included in the introductory section. In addition, an introductory letter from Tim Light, senior vice president, Fuel, Emissions and Logistics, was included at the beginning of the online Survey. A copy of Mr. Light’s letter is attached to this report.

Also requested was a copy of the suppliers’ corporate sustainability report, if they prepare such a report.

The Survey results show only three of the suppliers who responded issue sustainability reports and these reports were sent to AEP. We hope AEP’s efforts in issuing this report, which provides certain educational information in the introductory section of the Survey, will spur an increase in the number of suppliers publishing sustainability reports. At a minimum, some suppliers will gain an awareness of such a reporting model and will consider becoming more transparent.

Fourteen suppliers responded to the Survey, although some respondents chose not to answer some of the questions. Ten entities categorized themselves as “facilities” rather than actual surface or underground mines. They were either preparation plants or loadouts. The suppliers entered 62 total mines and facilities with Mine Safety and Health Administration’s identification numbers (MSHA ID). Of the 52 producing mines, 23 were underground mines and 29 were surface mines. Physically, the mines stretch from the Gulf coast to Wyoming and as far as Pennsylvania in the east. Five of the six major coal producing regions were covered.

SOURCES AND MINE DEMOGRAPHICS

The Survey focused only on those mines that provide coal to AEP. For each mine included in the Survey, the federal MSHA ID was requested. These data provide specific and unambiguous identification of each mine or facility, regardless of the mine’s location within the United States. Having the MSHA ID assured the data collected by AEP were accurate for each mine listed.

Survey respondents accounted for 56.3 million tons shipped to AEP in 2009. Of this total, 55.7 million tons are identifiable by the type of mining, while 550,000 tons came from facilities and cannot be identified by its production type. The following table is provided to better illustrate these response numbers:

### 2009 AEP Coal Purchases

<table>
<thead>
<tr>
<th>Description</th>
<th>Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009 AEP Coal Purchases</td>
<td>70.7</td>
</tr>
<tr>
<td>2009 AEP Coal Consumption</td>
<td>65.9</td>
</tr>
<tr>
<td>Suppliers requested to participate accounted for</td>
<td>68.7</td>
</tr>
<tr>
<td>Fourteen Suppliers who responded provided</td>
<td>56.3</td>
</tr>
</tbody>
</table>

The 56 million tons is 82 percent of the coal provided by the suppliers, which AEP believes is an excellent response rate. The 1.97-million-ton difference between the total 70.7 million tons purchased in 2009 and the 68.7 million tons purchased from the suppliers requested to participate in the Survey is made up of financial house purchases and those 2009 suppliers who are not current suppliers to AEP.

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1 A loadout is typically a coal loading facility that loads either trucks or railroad cars for shipment to the customer.
BACKGROUND DATA
To provide a broad platform for the suppliers to provide their information, up to 10 separate mines could be entered into a single Survey response. Within each of these 10 mines, provisions were included to report the state mining permits for a single mine. AEP recognized that some mines, especially surface mines, might operate on multiple permits within a single operation or MSHA ID.

The process for collecting data for each mine flowed through the Survey and progressed using a series of questions to allow for data to be evaluated and analyzed based on several factors. The process for each mine was similar, however, questions did vary based on mine type -- surface or underground -- and if there was a facility or plant associated with the mine.

MINE-BY-MINE SURVEY
The mine-by-mine section of the Survey asked for data to be divided into various statistical areas. All mine Survey data were referenced to their respective MSHA ID.

Regional Information
First, the county and state for each mine enabled AEP to group the data for specific coal regions. The regions and areas used in the analyses are listed below, which generally follow the U.S. Energy Information Administration’s (EIA) glossary:

Northern Appalachian (NAPP) – Maryland, Ohio, Pennsylvania, and Northern West Virginia
Central Appalachian (CAPP) – Eastern Kentucky, Virginia, Southern West Virginia, and certain northern counties of Tennessee
Illinois Basin – Illinois, Indiana, and Western Kentucky
Powder River Basin – Wyoming and Montana
Uinta Basin – Colorado and Utah (selected counties)
Gulf – Arkansas, Louisiana, Mississippi, and Texas

The Survey revealed the following breakdown by region of mines and/or facilities:

Central Appalachia (CAPP) ......................... 28
Gulf ................................................... 2
Illinois Basin .......................................... 1
Northern Appalachian (NAPP) ................. 24
Powder River Basin (PRB) ......................... 7
Uinta (Colorado and Utah) ......................... 0
Total 62
Additionally, a table at the end of this report shows by region and by mine type (underground versus surface mining), the total 2009 mine production along with the shipments to AEP that were reported in the Survey. The total 2009 production from the reporting mines was 365 million tons, or 34 percent of the national production of 1.073 billion tons. These mines produced 286 million tons from surface operations and 79 million tons from underground mines. Of the 286 million surface-mined tons, 261 million tons were produced by the Wyoming mines in the Powder River Basin, where very thick, low-sulfur, sub-bituminous coal seams are mined. The remaining 25 million surface tons came from Central Appalachia (12.4 million tons), the Gulf region (6.8 million tons), and Northern Appalachia (6.1 million tons). These figures represent the total production from the mines, not the amount provided to AEP.

**Work Force Proximity to Mines**

In an effort to understand the localized nature of the labor force as indicated in GRI MMSS, respondents were asked to identify the proportion of the work force that lived within 50 miles, 75 miles, and greater than 75 miles from the mine.

As expected, coal mining employment is highly localized. Of those responding, 86 percent live within 50 miles, 10 percent live between 50 and 75 miles, and the other 4 percent live greater than 75 miles from the mine.

**Permit Information**

This section of the Survey queried suppliers about the tonnage under permit as well as current additional permitting. This was designed to determine the supplier’s status with permitting actions and the life expectancy of each mine. Part of this analysis includes providing the state reclamation permit number. However, since individual states administer permitting1, the nomenclature used varies and is not uniform from state to state.

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1 The Surface Mining Control and Reclamation Act of 1977, Public Law 95-87, created the federal Office of Surface Mining (OSM). The law allowed for individual state programs to establish “primacy” for the implementation and enforcement of the act. “Each state …which wishes to assume exclusive jurisdiction over the regulation of surface coal mining and reclamation operations… shall submit to the Secretary...a State program which demonstrates that such State has the capability of carrying out the provisions of this Act and meeting its purposes....” (Section 503)
of the permitted area or mine. In fact, many permits have a mixture of post-mining land uses, not necessarily a single use\(^1\).

It was abundantly clear during stakeholder meetings in November 2009 and December 2010 that the definition of mountaintop mining differs among stakeholders. The Survey focused on the regulatory definition of mountaintop mining, whereas environmental groups tend to define it much more broadly.

The U.S. Environmental Protection Agency, Region 3 defines mountaintop mining as:
- "Mountaintop coal mining is a surface mining practice involving the:
  - removal of mountaintops to expose coal seams, and disposing of the associated mining overburden in adjacent valleys;
  - “valley fills.” Valley fills occur in steep terrain where there are limited disposal alternatives.\(^2\)

The statistical results of this Survey were based on the regulatory definition. Therefore, they can differ in magnitude than if a broader definition were applied.

The Survey showed the respondents to this section answered the questions for 42 mines. The total tonnage

\(^1\) These limited post-mining land uses for AOC variances are specified by federal law Sec. 515(c) (3) for mountaintop mining and Sec. 515(c) (2) for steep slope mining. There also are additional provisions for “equal or better economic or public use.”

\(^2\) [www.epa.gov/Region3/mtntop/](http://www.epa.gov/Region3/mtntop/)
currently under permit was 6.2 billion tons. Additional permitting was under way for 21 of these mines with an additional tonnage of 708 million tons, or 11 percent of the total current permitted tonnage. Post-mining land use was indicated for 63 different permits, with one being industrial/commercial and the remainder fairly evenly split between agricultural use and forestland/fish/wildlife uses. There were only four mines indicating a variance from reclaiming to the AOC. Three of the four mines indicated the post-mining land use would be “woodland/wildlife”. The fourth mine indicated a post-mining land use of agriculture/pasture land. None of the mines with variance from AOC stated the reason for the variance to be related to mountaintop removal.

**Production and Mining Methods**

The Survey requested two historical production figures for 2007 through 2009; first, the total mine production as reported to MSHA, and second, the tonnage that was delivered/shipped\(^1\) to AEP. This latter information was important to weight-average other aspects of the Survey. However, this latter information can be difficult to obtain if the shipments come from centralized facilities, which combine tonnages from multiple mines and may include multiple methods of surface and underground mining.

In addition to the production aspects, the Survey asked for an estimate of the proportion of the various methods of surface and underground mining used in each year of the three-year history. For surface mining, the categories and descriptions are listed below:

**Area Surface Mining** – A method used on relatively flat terrain to recover coal by mining long cuts or pits successively. The material excavated from the cut being mined is deposited in the cut previously mined.

**Contour Surface Mining** – A method used in steeper terrain to recover coal by mining the coal seam along the contour of the hill. Typically, some or all of the material excavated from the initial cut that is mined is then placed in a valley fill. Material excavated from successive cuts is deposited in the cut previously mined.

**Auger Mining and Highwall Mining** – Auger surface mining is a method where coal is recovered through the use of a large diameter drill driven horizontally into a coal seam in a hillside or from a highwall. It usually follows contour surface mining, particularly when the overburden is too costly to excavate. Highwall surface mining is a more sophisticated form of auger mining, with improved technology that can recover coal at greater distances from the opening than auger mining.

**Mountaintop Surface Mining** – A method of mining where the mining operation removes an entire coal seam or seams running through the upper fraction of a mountain, ridge, or hill by removing all the overburden and creating a level plateau or a gently rolling contour with no highwalls remaining. This method requires that the operator be granted a variance from reclaiming to the approximate original contour and that the land would be capable of supporting post-mining land uses of industrial, commercial, agricultural, residential or public facility. The excess spoil is placed in a valley fill.

For underground mining, there were three categories from which to choose the mining method: continuous mining, secondary recovery using continuous miners and longwall mining.

However, care must be taken in using these data because mines practicing secondary recovery and longwalling also must use continuous or conventional mining for development purposes. Many longwall producers consider the entire mine production as longwall, even though continuous miners are absolutely required to develop the indi-

\(^1\) Shipped production was to be considered “delivered” for the survey.
individual longwall panels and the supporting main and sub-
main networks necessary for the infrastructure and coal
transportation elements of an underground mine.

The Survey showed the annual production of the mines
responding was 365 million tons in 2009, approximately
one-third of the total tons produced in the United States.
That figure should not be confused with the tons pur-
chased by AEP, which is only a fraction of the 365 million
tons. It does demonstrate, however, that on a production
basis, the Survey covered a wide range of coal mining in
the country.

Not all the mines responding indicated the annual ton-
nages shipped to AEP. However, the shipments reported
totaled 45.4, 50.2, and 56.3 million tons, respectively for
the three-year period of 2007 through 2009.

The responding mines included 291 surface mines and
23 underground mines, which reported 2009 production
tonnage. The production rate between the underground
and surface mines is dissimilar because of the high output
of the western surface mines in the PRB region.

Of the 286 million tons produced from surface mining,
261 million tons came from Wyoming. The remainder of
the surface-mined tonnage was only 25 million tons.

Underground mines produced 79 million tons. Of the 23
underground mines, all used continuous mining for some
portion of their production. Fourteen mines used long-
wall mining and were located predominantly in Northern
Appalachia.

Twenty-six surface mines indicated the mining method
they used. These mines are from four of the five regions,
which had respondents as shown below. The other two

1 In this survey, a mine was classified by its primary mining method.

regions were the Illinois Basin and the Uinta Region. The
Illinois Basin only had one underground mine respondent
and the Uinta region had no responses. Therefore, they
were not included within this table of surface mines.

<table>
<thead>
<tr>
<th>Region</th>
<th>Area/Contour</th>
<th>Mntop</th>
<th>Auger</th>
<th>Highwall</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPP</td>
<td>3</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>GULF</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>NAPP</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>PRB</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
</tbody>
</table>

Of the 10 surface mines surveyed within CAPP (Central
Appalachia), seven mines provided the method of surface
mining carried out in 2009. Of these, three predominantly
mined using area and/or contour methods and four predominately used mountaintop mining. By compiling
the annual production of the mines, and proportioning
the amount mined using mountaintop mining, the 2009
tons produced by mountaintop mining totaled 6.6 mil-
lion tons at those mines. However, of the total 6.6 million
tons, only an estimated 2.0 million tons were delivered
to AEP, which represents 3.6 percent of AEP’s 2009 sur-
veyed delivered tonnage of 56.3 million tons. One should
recognize, however, there might be mines that (1) did not
respond to the Survey or (2) did not respond to the min-
ing method questions that may have delivered additional
mountaintop-mined coal to AEP.

Safety and Health Data
AEP sought both quantitative and qualitative types of data
for the analysis of safety and health performance. The pri-
mary source of quantitative data was the national data-
base of information maintained by MSHA (MSHA DRS).
This data provided the ability to compare results across
an industry using consistent, standard measures of per-
formance, which is critical to identifying trends, issues of
concern, best practices, and opportunities for improve-
ment. In order to maintain the consistency and quality of the data retrieved from the MSHA database, AEP chose to gather all pertinent safety and health data rather than have each individual supplier provide the data. AEP’s collection of data provided an independent verification of the data, an issue raised in one of the stakeholder meetings.

The second type of data sought by AEP in the Survey was more qualitative and dealt with formal safety and health programs and the specific components of those programs, such as: wellness programs, safety and health incentive programs, an audit program and its frequency, a formal ergonomics program, employee participation in the programs, added safety training, Job Safety Analysis (JSA), risk assessment reports, and safety information management systems.

From the database, AEP sought information on the safety and health performance of the suppliers for the three-year period from 2007 through 2009. The requests concerning safety aspects included data related to the most frequent enforcement actions taken by MSHA, not the particular safety (or health) provisions of the Coal Mine Health and Safety Act of 1977\(^1\) (CMHSA), such as ventilation, roof control, etc. The health portion requests information regarding compliance with respirable dust and noise provisions of the CMHSA.

All of the safety and health data were tabulated based on the number of violations and the penalties and/or fines applied to the violations.

Gathering data on the fines assessed provide a sense of the seriousness of the citations issued by MSHA\(^2\). Although such penalties are subject to informal and formal review and appeal, the public information, at least, provides an order of magnitude. However, it should be noted that larger mines are subject to more inspections, which usually results in more citations, and therefore incur more penalties than smaller mines. The most frequent type of MSHA citation is the 104(a) citation that is issued for a violation without imminent danger or willful connotations. The number of such violations is typically much higher in underground than surface mines. Because larger underground mines have more operating units or sections underground, they take longer to inspect and require more inspector shifts.

One way to account for this difference is to use the statistic MSHA began using recently, called Violations per Inspector Day (VPID.) The general magnitude of such a quotient is less than one violation per inspector day. MSHA now uses this statistic as well and the Survey collected this data. The Survey also collected information regarding violations that were more serious. These included unwarrantable failure citations and orders, imminent danger citations, and withdrawal orders\(^3\).

An additional subpart of the compliance performance was to request information on newer aspects of MSHA’s enforcement efforts in the last several years, one of which is a “pattern of violations.” MSHA uses an initial warning letter that puts the mine operator on notice that it is ap-

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1. Current federal mine safety legislation history dates to 1969 when the Coal Mine Health and Safety Act was created following the mining disaster at Farmington, WV, in 1968. It was substantially amended in 1977 following several other mining disasters. The Mine Improvement and New Emergency Response Act of 2006 followed the Sago and Aracoma mine disasters
2. MSHA uses a classification system that categorizes violations as “significant and substantial” or S&S as it is referred to in the industry. However, the classifying of violations has historically been quite variable. Therefore, AEP chose to use a more specific measure, i.e., the penalty assessed. It should be noted that penalties are increased for those violations classed as S&S.
3. Withdrawal orders typically require all work including production, to stop in the affected area until the violation is abated. Other violations can be abated while other work including production continues.
The most important information, identifying mines with significant safety compliance problems from all of the data collected from the Survey, were the POV warnings and citations. For the 2010 Survey, no mines reported receiving a POV citation.

Two mines did report receipt of warnings from MSHA they were approaching a POV citation situation. These two mines were considered negative outliers and were both underground mines.

The Survey results also reflected that for the most frequent type of MSHA citation, the 104(a) citation, the number of such violations was higher in underground than in surface mines.

The average number of MSHA violations (104(a)) within underground mines responding to the Survey was 355 per mine in 2009. The average number of violations per mine increased from 263 in 2007 and 328 in 2008, an increase of 20 percent.\(^1\) Although this is a substantial unfavorable change, it is tempered by the fact that the number of inspections at surveyed underground mines increased by 31 percent from 2007 to 2008, using VPID information as an indicator. Inspections stayed about the same when comparing 2008 and 2009 on a VPID basis. This increase was determined using MSHA’s figures for Inspection Days for 2007 through 2009.\(^2\) The number of violations cited increased considerably for underground mining from 2007 to 2008, but the increase from 2008 to 2009 was much lower. The resulting Violations per Inspector Day remained nearly the same when comparing 2008 to 2009 (0.59 to 0.61).

The difference in magnitude of citations 104(a) for surface mines was significantly lower in the Survey data. Of the surface mines responding, the average violations per mine were 10 in 2007, 17 in 2008, and 17 in 2009. The increase from a base of 2007 and 2008 to 2009 was 26 percent\(^3\), which is somewhat higher than the increase of the underground mines of 20 percent cited in the previous paragraph. However, reviewing the MSHA data for Inspection Days for 2007 through 2009 shows a significant increase (30 percent) at surface mines from 2007 to

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1 Calculation: \(\frac{355-[(263+328)/2]}{[(263+328)/2]} = 20\%\)
2 There is an overlap in that the fourth quarters of 2007 and 2008 are overlapping quarters because MSHA uses a 15-month period instead of a 12-month period for this statistic. AEP’s consultant does not believe this factor has a significant bearing on the figures used in this report.
3 Calculation: \(\frac{17-[(10+17)/2]}{[(10+17)/2]} = 26\%\)
2008, which explains the increase in average violations shown above. The increased inspections from 2008 to 2009 was a much lower 6 percent, and the corresponding Violations per Inspector Day for MSHA's two 15-month periods at the surveyed surface mines was 0.40 and 0.48, respectively.

For the responding facilities, the 104(a) citations were reduced on average to eight in 2009 from 13 in 2007 and 14 in 2008.

**Accident Rate Data**

Another component to the Survey for safety was reviewing the suppliers' accident rate statistics for the three-year period. This statistic provides a general basis for evaluating the mine operator's safety program, regulatory enforcement actions, and employee actions to prevent accidents. These questions included the number of accidents/injuries and categorized the accident/injuries into two groups, fatal accidents and non-fatal-days-lost (NFDL) accidents or “lost-time accidents.” There are other rates that include all accidents including those wherein no “lost-time” occurred. These are also referred to as “reportable.” The Survey however, focused on the more serious, lost-time accidents.

Similar to using a quotient as in Violations per Inspector Day, accident reporting uses an incident rate, which is the number of injuries per 200,000 employee-hours worked¹. This is noted as the NFDL IR rate but which includes fatal accidents as well. This statistic is most useful for comparison among mines and usually has a magnitude in the low single digits on a national basis. Often the terms “incident rate” and “injury rate” are used synonymously as IRs. The rate is usually somewhat higher for underground mines than surface mines and facilities.

AEP chose to include another measuring tool for accidents by requesting the eligibility status of the mine in a program jointly run by the National Mining Association and MSHA, called Sentinels of Safety Award. These awards are limited in number, and within different mine size categories; the tie breaker is the number of hours worked. Thus, the larger mines within each category are more frequently the awardees. AEP requested information as to whether a mine reached the milestone for qualification for the award for each of the three-year historical periods.

On a national basis, the injury or incidence rate (IR), for coal mining declined between 2002 (5.22)² and 2009 (2.99). Of course, this reduction was marred by individual fatal accidents and several multiple fatal accidents in that period³ including Sago (January 2006, 12 deaths), Aracoma (January 2006, 2 deaths), Darby (May 2006, 5 deaths) and the Crandall Canyon (August 2007, 9 deaths) mine disasters. (The April 2010 Upper Big Branch Mine disaster, which claimed 29 lives, was the worst U.S. mine disaster in nearly 40 years, but occurred after the 2007 through 2009 period of this Survey's data collection. Thus, it was not a factor in this survey.) Based on the data collected, the accident rate reduction for the coal mining industry of 43 percent from 2002 to 2009 represents a significant improvement.

Within the period covered by the Survey, 2007 through 2009, the national accident rate for surface and underground bituminous mines⁴ declined from 3.50 in 2007 to 2.99 in 2009, a reduction of 15 percent. AEP's surveyed mines decreased their injury rates from 2.57 in 2007 to

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¹ The 200,000 hours represents the approximate work exposure of 100 employees working 50 weeks per year at 40 hours per week. An older rate formerly used by the industry was the "frequency rate", which used 100,000 hours.

² Injuries include both “fatal” and “nonfatal-days-lost” injuries per 200,000 hours worked.


⁴ MSHA Injury Experience in Coal Mining, IR1331-2006, IR1336-2007, IR1341-2008, TABLE 2B INJURY EXPERIENCE BY DEGREE, WORKTIME, AND PRODUCTION FOR WORK LOCATIONS AT BITUMINOUS COAL OPERATIONS IN THE US.
2.24 in 2009 or 13 percent. Although the AEP Survey respondent mines’ reduction was not as large as the national accident rates, the accident rates for the surveyed mines are significantly lower than the national averages. For example, in 2009, the surveyed mines were 25 percent lower (2.24 vs. 2.99) than the national average.

Exclusively within the underground mines, the national average accident rate dropped from 5.04 to 4.23 or 16 percent from 2007 to 2009. The accident rate among AEP surveyed underground mines dropped from 3.86 to 3.13 or 19 percent. In 2009, the AEP surveyed underground mine figures are 26 percent lower than the national average.

The surface mines had a similar trend. The national average declined from 1.44 to 1.29 (10 percent) between 2007 and 2009. The AEP surveyed mines did not decline. They increased from 0.80 to 0.89, by approximately 11 percent. However, it should be noted the accident rates of the responding suppliers are still well below the national averages. In 2009, the 0.89 accident rate is 31 percent lower than the national average.

A serious negative anomaly occurred in the fatal accident category however. The surveyed mines recorded zero fatalities in 2007, two in 2008, and two in 2009. All mines with a fatality were considered negative outliers. Three of the fatal accidents occurred at underground mines and one occurred at a surface mine.

The Survey showed during the period of 2007 through 2009, almost 25 percent of the 62 responding entities in any given year met the criteria to be eligible for the Sentinels of Safety Award.

**Health Compliance**

Health provisions under the Coal Mine Health and Safety Act (CMHSA) as enforced by MSHA generally include two main aspects. Of significant concern with underground mining is respirable dust control. Generally, at the great majority of mines surveyed, no significant noncompliance exists. However, the Survey did identify five underground mines with significant numbers of violations. If a mine received nine or more violations in one year, or a total of 15 violations during the three-year period, it was categorized as having significant noncompliance. Three of the five mines were longwall operations and the other two were continuous mining operations. Two of the mines were operated by the same supplier and this supplier had already been identified as a negative outlier. The mine with the highest total of dust violations had also previously been identified as a negative outlier.

Affecting both underground and surface mining are the provisions for noise control. Two underground mines had an abnormally high number of noise violations. The qualifying limit was considered to be seven or more violations in one year or a total of 10 violations during the three-year period. Both of these were longwall mines.

**Health and Safety Program Information**

The descriptions of the Health and Safety programs were diverse. They ranged from programs that went well beyond the norm to those that were more typical and in some cases required by state regulators.

Nearly all (97 percent) of the respondents indicated they included incentive programs; 77 percent included audits by personnel from outside the immediate mine employees, while 58 percent conducted audits more than once per year; and 92 percent included employee participa-
Furthermore, 90 percent of the mines offer employees additional safety training above required limits; 92 percent have formal Job Safety Analysis (JSA) programs; 80 percent have Risk Assessment programs; and 93 percent include an Information Management System as part of their Health and Safety programs. Wellness programs were included in 68 percent of the mines but only 17 percent had formal ergonomics programs.

**Environmental Data**

There is more difficulty establishing trends, comparing performance, establishing statistics, or identifying best practices with environmental performance because, unlike MSHA, a national database of environmental performance data is not maintained at the federal level. The Office of Surface Mining Reclamation and Enforcement (OSMRE or OSM), the enforcement agency under the Surface Mining Control and Reclamation Act of 1977 (SMCRA) within the Interior Department, does not maintain a historical record of noncompliance.

Furthermore, the implementation of the federal law is through the various states with coal mining operations that elect to be the primary enforcement agency. The Office of Surface Mining provides oversight to the various primacy state programs, but the programs are individually managed by the states, have widely varying nomenclature, and are very difficult to compare. The statistics that are maintained only include the outstanding or unabated violations, making comparisons on a nationwide basis nearly impossible. During 2009, AEP's consultant explored many of the state programs to determine the availability of statistical information. The findings ranged from fully computerized, publicly accessible databases, to some states that would have to respond to statistical queries by manually researching their internal files.

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1. Tennessee is an example wherein the federal Office of Surface Mining (OSM) provides the primary regulatory enforcement rather than the state of Tennessee.
The other environmental portion of the Survey included three specific sections on environmental programs, environmental impact, and environmental compliance.

**Environmental Programs**
The Environmental Program section of the Survey first requested whether a formal program existed, since they are not nearly as prevalent in the coal mining industry as safety and health programs.

If a formal program existed, the Survey asked if the following items were included in the program: compliance audits, programmatic audits, frequency of either type audit, recycling program, spill prevention, control, and countermeasure plans (SPCC), formal written biodiversity programs and formal development of wildlife areas.

The Survey results found 47 of 60 responding mines, or 78 percent, reported having formal environmental programs. Of those mines with programs, 79 percent included compliance audits, and 57 percent included programmatic audits. Programmatic audits basically check the status of component portions of a program to see that the programs are in place and functioning. A strictly programmatic audit would not necessarily involve checking the compliance statistics. Of those performing audits, 53 percent carried out their environmental audits (either type) more than once per year. (Note, these audits are for environmental performance and are in addition to health and safety audits mentioned previously). Of the respondents, 71 percent of responding mines have recycling programs and 82 percent have Spill Prevention and Control Countermeasure (SPCC) plans, while 31 percent responded that they have formal wildlife development areas as part of their reclamation plans.

Of the respondents, 40 percent indicated they have written biodiversity plans.

**Environmental Impact**
This section of the Survey focused largely on performance indicators from the GRI’s Mining and Metals Sector Supplement. These indicators are focused on areas such as mine closure plans, abandoned mine site reclamation, stripping ratio, air emissions, water usage and refuse disposal. The Survey also asked if the mine or facility had received any reclamation awards during the three-year survey period.

Additional information was sought on whether the mine had a formal closure plan over and above the plan required by OSM. The Surface Mining Control and Reclamation Act requires a final reclamation plan for all mines and very few mines have a plan other than the required reclamation plan.

Within the environmental impact portion of the Survey, one significant topic was coarse refuse disposal. Only 17 mines and facilities, or 27 percent of all responding entities, specified what method of coarse refuse disposal was used. Of these 17 mines, 70 percent used coarse refuse to construct an embankment, 18 percent used valley fills, and 12 percent used landfills, which are not valley fills. However, this seemingly low response rate is because many mines do not utilize coal preparation or washing at the mine directly. Many truck the run-of-mine product to a coal washing facility that is remote from the mine and not under the umbrella of the MSHA ID defining the mine itself. Some ship to centralized washing and/or loadout facilities that are used collectively for multiple mines while other mines ship their product raw. The latter is especially true regarding many surface mines that can more selectively load the coal in the pit, thus avoiding the need to wash the coal. Furthermore, the large surface mines of Wyoming's Powder River Basin and the Gulf region do not wash their coal and thus do not have coarse refuse disposal as such, other than in minor amounts. Of the 45 entities not specifying a method of coarse refuse disposal, 38 answered “Not Applicable” for their mine, while only seven gave “No Response” to the question.
Seventeen mines and facilities specified their fine refuse disposal method. Of those, 15, or 88 percent, use impoundments, and one (6 percent) uses mixed methods. Only one mine indicated underground injection of fine refuse. Regarding the need for perpetual water treatment (post-mining), 60 entities responded, and of those, only 8 percent indicated such a need. Regarding significant air emissions, which required a permit, 62 entities responded to the question with 18 (29 percent) indicating having such. Those mines generally included the Wyoming surface mines, with the issue there being fugitive dust, and large preparation plants, typically in the NAPP region.

Several questions addressed the amount of reject material generated in the cleaning process. This was significantly higher for underground mines than for surface mines. This could have been the result of which mines responded to these questions, but generally speaking, surface mines can be more selective in the mining process by carefully loading out only the coal and leaving out-of-seam material in the pit. This contrasts with underground mining where out-of-seam material is typically loaded out along with the coal. Therefore, in the washing or cleaning process this added non-coal material is washed out.

There were 17 entities that responded to the reject material questions. A total of 118.2 million tons of waste material were generated and disposed of in 2009. For those respondents where the type of mining can be clearly identified, 104.2 million tons of waste were generated by underground mines, while only 3.8 million tons of waste were from surface mines. The remaining 10.1 million tons were generated by preparation plants, where a combination of underground and surface mined coal is processed. In addition to the tonnage of reject waste, the Survey requested the percentage of reject. For underground mines, the average reject per mine for 2009 by region is listed below:

<table>
<thead>
<tr>
<th>Region</th>
<th>Tons Generated</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Appalachia</td>
<td>104.2 Million tons</td>
<td>30 percent</td>
</tr>
<tr>
<td>Illinois Basin</td>
<td>tons not reported</td>
<td>63 percent</td>
</tr>
<tr>
<td>Total Underground</td>
<td>104.2 Million tons</td>
<td>33 percent</td>
</tr>
</tbody>
</table>

Of the three surface mines responding, all from the NAPP region, a total of 3.8 million tons of reject were reported. The average reject per mine was 19 percent. Essentially, the Wyoming surface mines of the Powder River Basin generated a negligible amount that was less than 0.1 percent on a percentage basis.

The Central Appalachian region tends to utilize centralized preparation plants that process a mixture of underground and surface mined coal. It is difficult to define the percent reject from each type of mining. However, the three CAPP facilities that responded to the material reject questions indicate that 10.1 million tons were generated in 2009, with an average facility reject of 58 percent.

The averages used above are not weighted averages. The more important figure was the reject on a mine-by-mine basis rather than weighting the average and thus skewing the results toward the higher production mines.

On questions regarding acres disturbed and acres reclaimed, for surface mines, 23 responses indicate an aver-

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1 Mixed methods typically dewater the fine refuse to some degree and then mix the fine refuse with coarse refuse for joint disposal. The dewatering method often utilizes either belt or filter presses.
2 For percent reject averages, the mean is used rather than a weighted average to avoid skewing the value, which would not be representative.
age of 276.3 acres disturbed in 2009, with an average of 176.2 acres reclaimed. For preparation plants, 15 respondents show an average of 22.5 acres disturbed and 9.3 acres reclaimed.

Operators of surface mines were asked for their average stripping ratio. For the 2007 through 2009 period, responding mines averaged from 16:1 to 17:1 cubic yards of overburden removed per ton of coal produced.

The underground mines were asked for the annual volume of methane discharged, expressed in metric tons per year. Eighteen mines responded: the total volume was 447,726 metric tons per year, or an average of 24,874 tons per underground mine. Also, the underground mines were queried regarding the capture of methane before it is liberated. Of the 18 responding mines, six do capture methane before mining. On the question of whether these mines attempt to recover methane after it is liberated and diluted with mine ventilation, none of the 18 mines attempts this.

Another question in this section of the Survey asked the surface mines and facilities for the types and volumes (million metric tons per year) of greenhouse gas (GHG) emissions during 2009. Twenty-six surface mines and facilities responded to this question. The types of GHG emissions during 2009 included CO₂, N₂O, CH₄, and HFCs. The 26 respondents emitted a total of 1,048,154 metric tons during 2009, with the vast majority of this (98.6 percent) being CO₂.

The preparation plants were also asked about the amount of process water withdrawn for use during 2009 in million gallons per year (mgpy). Twelve plants responded to this question, and their average usage is 226.7 mgpy.
However, 84 percent of this water is recycled for plant use. The most common water sources for this water were impoundments, followed by streams and rivers.

Six different mines, representing five different suppliers, reported winning national awards from either the Office of Surface Mining (OSM) or the Interstate Mining Compact Commission (IMCC) for the three-year period. A total of nine national awards were received by these six mines: two in 2007, three in 2008, and four in 2009.

Concerning state reclamation or environmental stewardship awards won during 2007 through 2009, 20 mines responded to this question. Eleven different state awards were received by nine different mines or facilities during the period.

**Environmental Compliance**

The final environmental section of the survey focused on compliance. Suppliers were asked about notices of violations in general and more specifically for water quality violations. Also, heightened enforcement actions such as failure to abate, imminent harm, pattern of violations, and show-cause orders were queried. Other noncompliance events were queried including permit blocks and reclamation bond forfeitures. Lastly, the number and magnitude of fines for environmental noncompliance during the historical period were requested.

The survey data showed 51 mines and facilities responding to questions concerning fines and violations, a total of 162 NOVs were reported over the three-years. Respondents reported 46 NOVs in 2007, 70 in 2008, and 46 in 2009. The more serious actions over and above the NOVs, namely the “failure to abate” and “imminent harm”, totaled only three in the three-years, with two in 2007, one in 2008, and none in 2009. The water quality NOVs totaled 137 over the three-years as indicated for the 51 entities reporting for this item. The number of NOVs issued for water quality was 44, 35, and 58 for years 2007 through 2009, respectively. This is a negative pattern in water quality NOVs over the period and will continue to be tracked for improvement. However, on a positive note, 58 percent of the 51 responding mines reported no violations during the three-year period, and 77 percent reported no water quality NOVs during the same time period.

No “patterns of violations” or “show cause orders” were reported by the respondents due to environmental compliance. Likewise, none of the suppliers reported having had reclamation bonds forfeited or permits blocked.

Fines assessed for environmental violations were reported as numbering 128 for a total of $161,421. The average fine was $1,261.

Spills reported in the Survey numbered four. Three spills were for coal slurry in unknown amounts, while the fourth spill was a release of about 1,000 gallons of solcenic emulsion fluid, which is used to make hydraulic fluid for longwall shields. The four spills occurred at three different mines. Two spills occurred in 2007 and two in 2008, and no spills were reported for 2009.

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1 Notices of Violation. This figure excludes those issued for violating water quality standards, which are discussed separately.
CONCLUSION

The 2010 Sustainability Survey of Coal Suppliers shows that AEP’s suppliers generally continue to improve their environmental, safety and health performance, with some exceptions. The surveyed mines represent one-third of the coal being mined within the United States and demonstrate the broad reach of this Survey nationally to include a large portion of the mining community. The Survey would not be possible without the voluntary participation of many of AEP’s suppliers.

AEP will continue to work toward expanding supplier participation in the Survey. However, it should be clear that participation in the Survey and survey results will not currently impact procurement decisions, as desired by some stakeholders. It should also be noted that, although a portion of the results are available through public sources, much of the information is not available except through voluntary participation. Furthermore, the public data, other than the safety and health data available from MSHA, is only available through records within nine different states’ regulatory agencies.

The Survey has successfully established a baseline for understanding the sustainability status of the majority of AEP’s coal suppliers. This data gives AEP the ability to compare the safety, health and environmental performance of its suppliers against similar suppliers and to use this data to encourage all suppliers to perform to a higher standard. We recognize that suppliers, who provided input for up to 181 pages of survey questions, expended considerable effort and resources to collect, assemble, and input the information requested.

This Survey collects information but does not establish policy or direction for AEP. However, we believe that the Survey is an effective tool that we can use in our efforts to encourage sustainability and sustainability reporting among suppliers as well as help to drive performance improvements. At a minimum, each respondent becomes familiar with the parameters used to measure sustainability.

ATTACHMENTS

• Tim Light, Senior Vice President, AEP, July 26, 2010 Introduction Letter in 2010 Survey
• Table of 2010 Survey Segments and Topics
• Table of Responding Mines, Number of Mines, Total 2009 production, and 2009 Shipment Tonnage

1 Indiana, Kentucky, Louisiana, Ohio, Pennsylvania, Texas, Virginia, West Virginia, and Wyoming
DEAR AEP COAL SUPPLIERS:

Recently, your company received a copy of the final report of the 2009 Sustainability Survey of AEP Coal Suppliers. This report summarized the data collected from our coal suppliers for the years 2006 through 2008. AEP will begin to gather 2009 data to further our ability to assess the environmental, safety and health performance of our coal suppliers and to help continue our dialogue among stakeholders, coal suppliers and the electric utility industry. The purpose of this annual survey is to allow AEP to gain a better understanding of the social and environmental concerns around coal mining.

In a letter your company received from Mike Morris, AEP's Chairman, President and CEO, he thanked you for providing the resources to complete the survey last year; I would like to echo Mike's sentiment. As Mike's letter stated, AEP and our coal suppliers must work together during this difficult time in both the mining and energy industries to meet the challenges of the future. AEP remains a strong supporter of coal and believes it is a vital energy component necessary for us to achieve sustainable long-term economic growth for America.

We recognize that our survey is rather lengthy and will require a commitment of time and resources to complete. However, your cooperation in completing this survey is important to us, and I personally thank you in advance for your participation. For those that participated in the 2009 survey, we have your company's data in our secure and confidential database for the years 2006 through 2008, thereby requiring only 2009 data to be completed in the 2010 survey. However, there are a few areas that require updating of 2007 and 2008 data. We are requesting those who did not complete the survey in 2009 to complete the entire 2010 survey by providing data for years 2007 through 2009.

We have modified the 2010 survey from last year's survey, based on your feedback, to provide clarifications and to re-focus some of the data being requested. Consequently, we have changed the format to ensure the questions are more concise and the overall survey is shorter in length. Also, since MSHA safety data are publicly available, AEP will compile these data for ALL survey respondents going forward, reducing the data collection burden for your company.

I want to emphasize that any information supplied to AEP in this survey will not be shared publicly. The data collected in 2009 were used to identify best practices for environmental, safety and health performance among our coal suppliers in 2010. Further, as a result of the survey, AEP held a stakeholder meeting in November of 2009 to begin a dialogue and to help further understanding of points of view among AEP, its coal suppliers and non-government organizations. We again plan to organize and hold a coal supplier stakeholder meeting later this year.

Should you have questions regarding the purpose of the survey, please contact Kimberly Chilcote – FEL Manager at 614-583-6301. If your question is in regard to a particular survey question or concerns the format of the on-line survey, please contact our consultant, J. K. (Jim) McWilliams at 614-738-8822.

We ask that you complete this survey NO LATER THAN SEPTEMBER 1, 2010.

Thank you for your time and cooperation with AEP to support our sustainability efforts.

Tim Light
Senior Vice President, American Electric Power
Fuel, Emissions and Logistics
# Table of Survey Segments and Topics

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<td>- Slurry Spills</td>
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<td>• Compliance</td>
<td>- Penalties/Fines</td>
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<td>- Health</td>
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<td>- Safety</td>
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<td>• MSHA Compliance</td>
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<td>- Notices of Violations</td>
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<td>- Violations per Inspector Day</td>
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<td>- Potential Pattern of Violations</td>
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<td>• Accidents and Injury Rates</td>
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<td>Sentinels of Safety</td>
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<th>Performance Parameter</th>
<th>Score Basis</th>
<th>Outlier Basis</th>
<th>UG</th>
<th>SUR</th>
<th>FAC</th>
<th>Negative or Positive Outlier</th>
<th>Outlier Threshold</th>
<th>Number of Outlier Mines</th>
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<tr>
<td>MSHA Compliance - Pattern or Potential Pattern of Violations (POV)</td>
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<td></td>
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<td>Did mine receive either a warning or citation for POV?</td>
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<td>Both</td>
<td>Negative</td>
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<td></td>
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<td>VPID in each of two years 2008 &amp; 2009</td>
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<td>&gt;1.13 in 2008</td>
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<td></td>
<td></td>
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<td>&gt;0.92 in 2008</td>
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<tr>
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<td></td>
<td>0.0 in both years</td>
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<tr>
<td></td>
<td></td>
<td>FAC</td>
<td>Negative</td>
<td></td>
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<td>&gt;1.05 in 2008</td>
<td>0</td>
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<td>FAC</td>
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<td>&lt;0.02 in 2008</td>
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<td>Accidents and Injury Rates - Fatal Accidents</td>
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<td>Did mine incur a fatal accident in 2007-2009?</td>
<td>Yes/No</td>
<td>All</td>
<td>Negative</td>
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<td></td>
<td></td>
<td>Yes</td>
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<tr>
<td></td>
<td>All</td>
<td>Positive</td>
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<td></td>
<td>Not considered</td>
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<tr>
<td>Accidents and Injury Rates - Incidence Rate (IR)</td>
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<td>Weighted average IR in 3 yrs 2007-2009</td>
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<td>&gt; 6.99</td>
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<td></td>
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</table>

1. Weighted on inspector days
2. Weighted on exposure hours
ENVIRONMENTAL CRITERIA USED TO DETERMINE POSITIVE AND NEGATIVE OUTLIERS

<table>
<thead>
<tr>
<th>Performance Parameter</th>
<th>Score Basis</th>
<th>Outlier Basis</th>
<th>UG SUR FAC</th>
<th>Negative or Positive Outlier</th>
<th>Outlier Threshold</th>
<th>Number of Outlier Mines</th>
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<tr>
<td>Environmental Compliance - Notices of Violation</td>
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<td></td>
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<tr>
<td>Total number of NOVs in 3 yrs 2007-2009</td>
<td>Mean ± 2 Std Dev.</td>
<td>UG</td>
<td>Negative</td>
<td>&gt; 40.65</td>
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<td></td>
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### TABLE OF RESPONDING MINES

Number of Mines, Total Annual Production, AEP Shipment Tonnage

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# of mines apply to 2009 only and may differ slightly from # of mines in 2007-2009 period
American Electric Power
1 Riverside Plaza
Columbus, OH 43215
614-716-1000
www.AEP.com