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October 29, 2008

Stephanie Stumbo
Executive Director
Public Service Commission
211 Sower Blvd.
Frankfort, KY 40601

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Re: Case No 2007-00455

Dear Ms. Stumbo:

At the informal conference held on October 20, 2008 among the parties to Case 2007-00455, generally referred to as the Big River's unwind, several questions were raised by the Commission staff about information Henderson Utility Commission had about the condition of Station Two. In response to the staff's request for that information, Henderson submits the attached binder.

Tab 1 of the binder contains a disk of four engineering reports conducted by

Exothermic Engineering:

a. Damage Resulting From Long Term Firing of Petroleum Coke Report

Commentary: WKEC has continuously since 1998 to present date, blended petroleum coke fuel (20% and higher) with specified Illinois basin fuel in firing the Station Two boilers. With the belief that WKEC's fuel practices may have caused damage to the Station Two boilers, HMP&L contracted the services of Exothermic Engineering, LLC of Liberty, Missouri to investigate and inspect the use of petroleum coke in the Station Two boilers and report on damages, if any, sustained by the boilers, as well as other portions of the power plant, as a result of their use of petroleum coke fuels. On July 26, 2007 HMP&L Station Two was inspected by Bill Smith of Exothermic Engineering for a visual external on-line inspection. Station Two was again visited by Mr. Smith during the 2007 fall outage, at which time he was able to make some internal inspections.

The report includes a review of the 2001 through 2006 Stanley Consultants' Reports of Station Two inspections and on page 12 describes Exothermic Engineering's inspection. Mr. Smith's conclusion recited as Item 12 is: "This is by far the worst condition utility power plant this engineer has ever inspected in 35 years in the industry."

b. Thermal Incident Assessment Report and Repair Estimate

Commentary: On January 29, 2007 the Unit No. 1 boiler of Station Two underwent a dry fire event. No repairs or replacements were made by WKEC and the unit was returned to unrestricted operation. HMP&L and Big Rivers employed the services of Exothermic Engineering, LLC to obtain an inspection of the Unit 1 boiler and report on damages, if any, sustained as a result of the January 29, 2007 thermal event. Inspections were conducted between October 8 and October 12, 2007 at a time when Unit 1 was out of service for a maintenance outage.

c. Visual Condition Assessment Report of Station Two

Commentary: Exothermic Engineering, LLC was employed by HMP&L to conduct a visual condition assessment of Units 1 and 2 of the Station Two Power Plant during the fall of 2007. Exothermic Engineering documented its assessment with 2364 captioned photographs, each depicting one or more conditions considered by Exothermic Engineering to be substandard in quality.

The report categorizes various conditions depicted by the photographs, such as safety, efficiency, corrosion, poor housekeeping, leaks, instrumentation, insulation and lagging and the like. The report groups the various photographs by numbers depicting a particular violation of maintenance standards.

The report contains a multiple page color chart identifying the number of each photograph and the particular violation or violations to which it is addressed. This chart relates to 2390 photographs. A Table of Contents identifies the photographs by numbers which are associated with various categories covered by the inspection.

Each photograph contains a written explanation of the object of the photograph. Many photographs contain red arrows identifying the particular object of the photograph.

Reviewing these photographs is a time consuming task but is the very best method of explaining the level of maintenance and care being practiced by the Station Two operator in the fall of 2007.

d. Visual Condition Assessment Repairs Cost Estimate

Commentary: Following Exothermic Engineering's Report of the Visual Condition Assessment of Station Two, HMP&L engaged the company's services to provide a report of the estimated repair costs for items found to be deficient in the Visual Condition Assessment Report.

Exothermic Engineering employed the services of Associated Mechanical, Inc., a general contractor, to assist in estimating the cost of correcting the deficiencies noted in the photographs. AMI utilized RS Means estimating information to assign resources. Local prevailing wage rates were applied to the man hours determined. The cost of construction equipment and overhead was prepared as a separate line item. Previous bids for Station Two repairs were utilized where applicable.

The report discusses the methodology employed and contains a photograph by photograph estimate of cost to repair the deficiencies noted in each particular picture. A summary of Exothermic Engineering's estimates of costs is contained on pages 5 and 6 of the Report.

In addition to the Exothermic Engineering Reports, the Executive Summaries of Stanley Consultants, Inc Annual Condition Assessment Reports for Calendar Years 2001 through 2005 are submitted for your review in Tabs 2 through 6. The complete reports have been filed in the record of these proceedings by Big Rivers Electric Corporation at Tab 51 of Big Rivers Electric Corporation's responses to Commission Staff's Initial Data Request in Case Number 2007-00455. Each Executive Summary contains a section entitled "Conclusions" and another section entitled "Recommendations". These reports conclude that the "Reid/HMP&L Station is not being operated or maintained in a prudent manner. The expected life of the plant is being compromised." (2003 Stanley Report) The 2005 Stanley Report, Conclusions, states: "The Reid/HMP&L Station is not being operated and/or maintained in an Acceptable Condition. The expected life of the equipment and systems installed at the plant are being compromised."

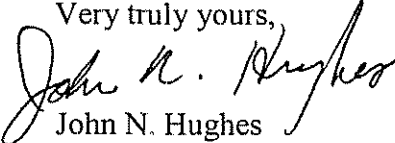
Finally, Henderson believes the Stone & Webster Management Consultants, Inc. Report of March 17, 2008 filed in the record by Alcan Primary Products Corporation and Century Aluminum of Kentucky in response to the Attorney General's Supplemental Request for Information confirms many of the concerns for the condition of the Station Two Power Plants expressed in the Exothermic Engineering Reports and the Stanley Consultants' Reports. On pages 57 and 58 of the Stone & Webster report there is a discussion of the major improvements to the Station Two Power Plants which will be required of Big Rivers Electric Corporation in the immediate future. The estimate of required boiler investment for each unit from now until 2024 is provided in the Report.

The other issue raised during the conference involves the reference to \$92,000,000 and \$13,500,000 Station Two repair costs. During the October 20, 2008 informal conference, a question was asked regarding a newspaper article projecting the costs of needed repairs to the Station Two Power Plant at \$92,000,000, which was later

changed to a figure of \$13,500,000. Henderson's explanation of those two cost estimates is detailed in Tab 7.

During the October 20, 2008, informal conference an allegation was made that the current condition of Henderson Station Two is a result of historical budget reductions made by Henderson. Henderson has reviewed its budget files for the budget periods FY2004-2005 through FY2008-2009. Attached in Tab 8 are budget summary sheets for each of the recent 5 budget periods. As noted in the summary sheets, Henderson did not eliminate any projects during this 5 year period that are currently listed in Tab 7 Exhibit C of Henderson's proposed Draft Station Two Unwind Termination and Release Agreement. Henderson did not research its Station Two Budget files for information prior to 2004-2005; however, it is not aware of any prior projects that are currently listed on Exhibit C.

This information should provide the staff with the clarification requested for these items. A copy of this letter with attachments has been mailed to the parties of record.

Very truly yours,

John N. Hughes

Attorney for Henderson
Utility Commission

INDEX TO BINDER

1. Exothermic Engineering Reports (CD)
2. Executive Summary of the Annual Condition Assessment Report of Stanley Consultants, Inc. for December 31, 2001
3. Executive Summary of the Annual Condition Assessment Report of Stanley Consultants, Inc. for December 31, 2002
4. Executive Summary of the Annual Condition Assessment Report of Stanley Consultants, Inc. for December 31, 2003
5. Executive Summary of the Annual Condition Assessment Report of Stanley Consultants, Inc. for December 31, 2004
6. Executive Summary of the Annual Condition Assessment Report of Stanley Consultants, Inc. for December 31, 2005
7. Response to PSC question for HMP&L regarding a reference to \$92,000,000 and \$13,500,000 for Station Two repair costs, including details contained in Exhibit C
8. Station Two Budgets for FY2004-2005 through FY2008-2009

Robert A. Reid/HMPL

Station Two

Annual Condition Assessment Report

Big Rivers Electric Corporation
Henderson, Kentucky

Final
December 31, 2001

CONFIDENTIAL

This document is confidential in accordance with the terms of Stanley Consultant's agreement with Big Rivers Electric Corporation dated April 14, 2000.



Stanley Consultants INC.

A Stanley Group Company
Engineering, Environmental and Construction Services - Worldwide

Executive Summary

This Executive Summary presents a brief description of the detailed information contained in this report, conclusions drawn from that information, and recommendations to Big Rivers Electric Corporation. These descriptions follow the same format as the report.

General

Big Rivers Electric Corporation (BREC) commissioned Stanley Consultants, Inc. (SCI), of Muscatine, Iowa, to observe and comment on Western Kentucky Energy's (WKE) operation and maintenance of the Robert A. Reid (Reid) unit and the two Henderson Municipal Power & Light (HMPL) units compared to prudent utility practice; and how WKE's operation and maintenance is reflected in year-to-year changes in the condition of these units. The specific equipment addressed in this report, is known as the Robert A. Reid/HMPL Station Two (Reid/HMPL) and includes the power plant, site, and all associated facilities. The Reid/HMPL Station is presently being operated and maintained by WKE, a subsidiary of LG&E Energy Corporation (LEC), under terms of a 25-year agreement.

Purpose

BREC wishes to assure to the extent possible, that, at the expiration of the 25-year agreement, the Reid/HMPL Station will be returned in a reasonable condition, allowing for normal wear and deterioration. The Reid/HMPL Station should be restored to the condition that existed at the time it was turned over to WKE, except for the normal aging of components. It should be noted that the condition of the Reid/HMPL Station at the time WKE assumed operation (mid-1998) is unknown to SCI personnel.

System No. 18 Circulating Cooling Water
System No. 19 Service Water
System No. 20 Closed Cooling Water

System No. 21 Waste Water Pretreatment
System No. 22 Condensate System
System No. 23 Condensate Polishing
System No. 24 Auxiliary Steam
System No. 25 Feedwater
System No. 26 Boiler Water Sampling
System No. 27 Boiler Chemical Feed
System No. 28 Air Extraction (Condenser)
System No. 29 Coal Handling
System No. 30 Ignition Oil

System No. 31 Steam Generator
System No. 32 Combustion Air
System No. 33 Fuel Burning Equipment
System No. 38 Precipitators
System No. 39 Lube Oil Purification
System No. 40 Turbine-Generator

System No. 41 Lube Oil
System No. 43 Electro-Hydraulic Control (EHC)
System No. 45 Turbine Steam Seals
System No. 47 Carbon Dioxide and Hydrogen (CO₂ and H₂)
System No. 48 Seal Oil

System No. 52 Main Power
System No. 53 Bottom Ash/Fly Ash Handling
System No. 54 Heater Vents and Drains, Extraction
System No. 55 Main and Reheat Steam
System No. 56 FGD
System No. 59.1 Site Drainage
System No. 59.3 Sewage Treatment
System No. 60 Secondary Sludge (FGD) Dewatering
System No. N/A Item does not belong to any of the above systems

Problem areas or items are noted as "Major," "Minor," "Cosmetic," "Safety," or "Legal." These comments are the opinions of SCI personnel, and have the following meanings in this report:

- (Major): The item (or condition of the item) has the potential for harm to the equipment identified.
- (Minor): Refers to inefficient operation of equipment or use of resources.
- (Cosmetic): Item is not considered to be a major or minor problem, but requires attention.

- WKE has extended planned turbine-generator overhauls to at least seven years.
- A data acquisition system (DAS) was installed for the Reid unit in the year 2001.

Disrepair or lack of maintenance of equipment:

- A photographic comparison was made between the Reid/HMPL Station and two other similar coal-fired power plants designated as Plant No. 1 and Plant No. 3.
- Data pertaining to plant outages and availability were reviewed. Available North American Electric Reliability Council/Generating Availability Data System (NERC/GADS) data are presented in Section 3 of this report. Available data on plant outages are included in Appendix E.
- Various documents provided by BREC such as the 1998 Depreciation Study, turbine inspection reports and many tube and deposit test reports were also reviewed, summarized and included in appendixes to this report, along with results of the 2001 walkthrough. Disrepair and lack of maintenance on equipment is discussed in depth in Appendix A and Section 1.
- Fire hoses were not properly stored. Fire extinguishers were not properly installed and typically were missing inspection cards or inspection cards were out of date. Fire hydrants were in disrepair, such as excessive corrosion.
- The side stream filter for the circulating cooling water system did not appear to be in service during the site visit.
- Over spray from the cooling towers collects along the outside of the basin and drains to a containment pond. A ditch was created by the drainage water and has exposed a buried electrical conduit.
- Many site examples were found and documented of poor preventative maintenance practices. Instruments and controls have not been calibrated in recent years which can result in poor process control. Examples of poor maintenance include oil spills around the combustion turbine and guards missing around a conveyor.
- Ash water pump B had been completely removed at the time of the site visit. Ash water pump A had a severe leak at the discharge elbow.
- Fifty (50) percent of major spring hanger cans are rusted through or hanging precariously from the structural steel.
- There are many cases where there are broken pipe u-bolts, missing hanger rods or rods not connected to hangers resulting in long runs of unsupported pipe.
- The Reid/HMPL Station appears to have a poor practice of leaving equipment, piping, wiring and conduit abandoned in place.
- Many junction boxes and electrical panels all over the plant site are left open and debris accumulates in them. Electrical cords are improperly stored, electrical lamps are missing guards, and electrical conductors are damaged or improperly installed.

Station and Green Station. The BREC Stations have been ranked in the following order from best to worst: 1.) Coleman; 2.) Reid/HMPL; 3.) Green; 4.) Wilson.

- There are numerous electrical hazards present and electrical code violations. These hazards range from *minor* to *serious*. See Section 1 and Appendix A. There is significant risk to both personnel and equipment.
- Unusable fire fighting equipment subjects personnel and equipment to injury and equipment destruction.
- The overall condition of the Reid/HMPL Station is *poor* in comparison to other coal-fired power plants that were visited (Plant No. 1, Plant No. 3, Plant No. 5, and Plant No. 6.)
- The lack of general maintenance and attempts to correct it in short outages, without an on-going preventative maintenance effort, is contrary to normal utility practices. This lack of *maintenance* will shift costs from maintenance to capital projects, and could result in additional expenditures by BREC.
- The missing ash water pump and severe leakage indicates that the integrity of the system is currently being comprised by *faulty operation of the equipment*.
- Lack of adequate pipe supports could present a safety hazard to personnel (steam line breaks loose and piping or live steam hits personnel in the vicinity).
- Typically, boilers are chemically cleaned every five years. While neither the extent or composition of waterside deposits in either the Reid unit or the HMPL Unit 2 tube samples suggests the need to chemically clean either boiler at this time, the relatively high proportions of copper in both samples indicate that the boilers will need to be cleaned within the next several years if a two-stage cleaning process is to be avoided (*one stage dedicated to copper removal*).
- The structures are at the point where the original paint system is gone. The boiler structures are within the plume of the cooling tower which contributes to severe corrosion of the structures.
- The lack of proper handrails presents a significant fall danger to personnel.
- Improper support of the coal conveyor support tower presents a safety hazard to personnel and equipment.
- The cinders that are built up on the beam stiffeners on the boiler, moisture from precipitation and boiler heat will promote corrosion on the beam stiffeners. The weep/drain holes in the beams are cleaned out.
- Corrosion of the main support column on the Reid unit and the column webs on the pipe rack are a safety hazard for personnel and equipment.
- Based on site observations noted in Section 1 and Appendix A, the Reid unit and both HMPL units may be experiencing weakening of the structure, mechanical damage, and failure of supports. A lack of maintenance and operation of equipment is evident based on site observations.

Section 3 – Comparison with Similar Units

This section compares the current condition of the Reid/HMPL Station to that of Plant No. 1, Plant No. 3, Plant No. 5, and Plant No. 6. Photos of the generating stations (Nos. 1 and 3 only) are shown in Appendix D – Plant Pictures. Also shown and discussed in Section 3 are the GADS data for Reid/HMPL Station as well as the GADS data for a number of other similar sized generating units in the range of 100 to 199 Megawatts (MW) and in the range 1 to 99 MW.

Appendices

Appendix A – Detailed Site Visit Observations May 22 and May 24, 2001, includes all on-site observations by SCI.

Appendix B – Staffing Charts and Safety Data including information on staffing during BREC's and WKE's periods of operation of Reid/HMPL Station, and safety information such as lost time injuries, KOSHA reportable injuries and incident rates.

Appendix C – Open or Pending items from *Equipment Inspection Reports* summarized in this Appendix are results of WKE's inspection reports.

Appendix D – Plant Pictures presents photos of various pieces of equipment and site conditions at BREC's Reid/HMPL Station and Plant's No. 1 and No. 3

Appendix E – Operations and Performance Data. This appendix includes BREC provided load data, outage charts, boiler water analysis spreadsheets and graphs, and an SCI prepared Petroleum Coke Firing Considerations Letter Report.

Appendix F – Open Items from 1998 Depreciation Study. This Appendix includes portions of the document entitled "Report on the Comprehensive Depreciation Study for Big Rivers Electric Corporation, Henderson, Kentucky, 1998." Only those portions of the study dealing with the Reid/HMPL Station are included in this Appendix. Items such as remaining life assessment, historical performance, and plant operation and maintenance are addressed.

Appendix G – Public Service Commission Report, March 23, 2001, includes comments pertaining to Reid/HMPL Station that were excerpted from BREC's March 23, 2001, letter to the Kentucky Public Service Commission (PSC).

Robert A. Reid/HMPL

Station Two

Annual Condition Assessment Report

Big Rivers Electric Corporation

Henderson, Kentucky

Final

December 20, 2002

CONFIDENTIAL

This document is confidential in accordance with the terms of Stanley Consultant's agreement with Big Rivers Electric Corporation dated April 14, 2000.



Stanley Consultants INC.

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Executive Summary

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Purpose

BREC wishes to assure to the extent possible, that, at the expiration of the 25-year agreement, the Reid/HMPL Station will be returned in a reasonable condition, allowing for normal wear and tear. The Reid/HMPL Station should be restored to the condition that existed at the time it was turned over to WKE, except for the normal aging of components. It should be noted that the condition of the Reid/HMPL Station at the time WKE assumed operation (mid-1998) is unknown to SCI personnel.

System No. 16 Makeup Water Pretreatment
System No. 17 Demineralizers
System No. 18 Circulating Cooling Water
System No. 19 Service Water
System No. 20 Closed Cooling Water

System No. 21 Waste Water Pretreatment
System No. 22 Condensate System
System No. 23 Condensate Polishing
System No. 24 Auxiliary Steam
System No. 25 Feedwater
System No. 26 Boiler Water Sampling
System No. 27 Boiler Chemical Feed
System No. 28 Air Extraction (Condenser)
System No. 29 Coal Handling
System No. 30 Ignition Oil

System No. 31 Steam Generator
System No. 32 Combustion Air
System No. 33 Fuel Burning Equipment
System No. 38 Precipitators
System No. 39 Lube Oil Purification
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System No. 52 Main Power
System No. 53 Bottom Ash/Fly Ash Handling
System No. 54 Heater Vents and Drains, Extraction
System No. 55 Main and Reheat Steam
System No. 56 Flue Gas Desulfurization (FGD)
System No. 59.1 Site Drainage
System No. 59.3 Sewage Treatment
System No. 60 Secondary Sludge (FGD) Dewatering
System No. 61 Selective Catalytic Reduction (SCR)
System No. 62 Coal Re-burn
System No. 63 Rotating Opposed Fire Air (ROFA)
System No. N/A Item does not belong to any of the above systems

Problem areas or items are noted as "Major," "Minor," "Cosmetic," "Safety," or "Legal." These comments are the opinions of SCI personnel, and have the following meanings in this report:

have lower ratios. It is important to note that this ratio is particularly sensitive to "site complexity."

- There appears to be significant differences in staffing practices at the Reid/HMPL Station compared to the other stations operated by WKE.
- WKE utilizes a large amount of outside (contract) labor at Reid/HMPL Station.
- Reid/HMPL Stations incident rate and recordable injuries have significantly increased this year compared to 2000 or 2001. Reid/HMPL Station's "lost time accidents per million man-hours worked" through August 2002 is 8.1 compared to 0.0 for Wilson Station 9 05 for Coleman Station. Reid/HMPL Station's 2001 ratio was much higher than Wilson Station or Coleman Station.
- A fuel blending system was added to the coal handling system in 2000. Numerous conveyor and transfer point modifications have also been made to date.
- WKE has related verbally to BREC that a high percentage of petroleum coke (pet coke) has been fired regularly in the Reid Unit and HMPL Units. Fuel quality is regularly worse than unit design parameters.
- BREC reported that WKE is making considerable modifications to storm water runoff containment in Coal Handling this year.
- BREC reported that WKE has on numerous occasions since 1998 used dynamite in the Reid Unit and HMPL Units for slag control and removal. BREC and the City of Henderson have jointly written a letter to WKE this year expressing concern regarding this practice.
- BREC reported that Federal EPA has reduced Reid/HMPL Station Clean Air Act (CAA) SO₂ emissions allowance limit due to burning pet coke.
- WKE has retrofitted a pilot plant for testing the potential for gypsum production to the Reid/HMPL/Green Station FGD/CSI system in 2002. At the time of the writing of this report results are inconclusive. This retrofit could impact the HMPL FGD system.
- The Reid Combustion Turbine (CT) and controls were modified to burn either fuel oil or natural gas in 2000 as part of WKE's NO_x and SO₂ reduction strategies. Actual testing of these modifications began this year.
- The Reid Unit was originally built with eight coal burners. Four of these burners were replaced with natural gas burners in 2000 as part of WKE's NO_x and SO₂ reduction strategies. Reid Unit burner controls were updated to better accommodate this in 2001. These burners and the gas line supplying Reid Unit have not been tested yet as of the time this writing. The Reid Unit has demonstrated that it can achieve full load with only four coal burners and the associated coal mill modifications that were also done.
- A number of plant system controls have been replaced or upgraded by WKE since last year. For example, Reid Unit data acquisition, coal feeders, fuel handling, etc. It appears that the original controls should still have useful life remaining and spare parts should still be obtainable. BREC should request evidence that the original controls required replacement.

- The Reid Unit experienced 28 unit starts in 1998, 16 unit starts in 1999, 14 unit starts in 2000, and 18 unit starts in 2001. The Reid Unit has already had eight unit starts from January through July 2002.
- BREC has stated that HMPL Unit 1 and HMPL Unit 2 coal grinding systems capacities have historically been sensitive to coal quality, especially moisture and hardness.
- BREC has stated that, based upon WKE provided information, the HMPL units have been frequently derated due to opacity since 1999. This appears to be supported by the high levels of ash in the scrubber slurry observed.
- WKE has extended planned outages to 24 months, with one-week "pit stops" in between. Kentucky requires boiler inspections every 18 months for re-certification.
- WKE has extended planned turbine-generator overhauls to at least seven years. HMPL Unit 1 and HMPL Unit 2 were last overhauled in 1994 and 1995, respectively. Typically turbine-generators in large electric generating stations are overhauled every 5 years.
- WKE's boiler insurer regularly expresses concern about turbine valves not being exercised per the Original Equipment Manufacturer's (OEM) recommendations.
- WKE's boiler insurer regularly expresses concern about the lack of High Energy (HE) piping inspections. To date BREC is unaware of any HE piping inspections on the HMPL Units other than small portions of the following piping and equipment:
 - HMPL Unit 1 Hot Reheat line in 1999 and 2002.
 - HMPL Unit 1 deaerator in 1999.
 - HMPL Unit 2 Cold Reheat line in 2001.
 - HMPL Unit 2 Hot Reheat line in 2000, 2001, and 2002.
 - HMPL Unit 2 deaerator in 2000.
- A photographic comparison was made between the Reid/HMPL Station and three similar facilities: Plant No. 1, Plant No. 3, and Plant No. 5. See Appendix D.
- Of the budgeted capital dollars that BREC has shared, 94 percent was applied toward the units upkeep in 2000, 80 percent in 2001, and 70 percent through July 2002. BREC reported that the remainder of the budgeted capital dollars each year has gone toward performance/efficiency projects.
- WKE has expended approximately 110,000 station maintenance man-hours in 1999, ~141,000 in 2000, and ~119,000 in 2001. This includes contract labor. BREC reported that this is less than 50 percent of typical annual maintenance man-hours expended prior to 1998. WKE has expended only ~103,900 man-hours through September of this year.
- Various documents provided by BREC such as the 1998 Depreciation Study, boiler inspection reports, and many tube and deposit test reports were reviewed, summarized and included in appendices to this report, along with results of the walk through.
- The SO₂ concentrations the FGD system has been treating have been considerably higher than what was usual prior to 1998. This directly impacts FGD/CSI systems upkeep. BREC reported that FGD process pH has decreased but process chloride level has

- Buck stays on all three units need to be cleaned out. These beams are full of ash and/or coal dust. Weep holes are plugged and can't drain rainwater. This aggravates corrosion of the beams. This condition is the same as last year's walk through.
- The HMPL units and the Reid Unit were at least as dirty if not more so than during the 2001 walk through. Considerable ash, coal dust and trash were noted on top of the boiler back pass, secondary and primary air ducts as well as on top of Forced Draft (FD) fans. When wet this will aggravate corrosion.
- Third party inspection reports to date indicate that HMPL Unit 1 and HMPL Unit 2 precipitators require some maintenance and repair. These reports stated that a preventative maintenance program on the units should be implemented and the repairs that were listed should be performed. It is unknown to BREC if the recommendations have been followed and repair items have been completed.
- At the Reid/HMPL fly ash silo large amounts of ash were periodically blowing out the top of the silo. A number of dust collector bags must have been broken. This condition is the same as last year's walk through.
- One of the coal conveyor support towers had sustained damage to the foundations as well as the horizontal and diagonal braces.
- In an August 2000 report from Innovative Combustion Technologies numerous operating and maintenance recommendations were made regarding HMPL Unit 1 and HMPL Unit 2 coal grinding and combustion air systems. It is unknown to BREC if these recommendations have been completed.
- The side stream sand filter for the HMPL cooling towers was not in service. This condition is the same as last year's walk through.
- Ash Sluice Pump B had been removed from the sump at the time of the walk through. Ash Sluice Pump A had a severe leak at the elbow. This condition is the same as last year's walk through.
- The structural and support steel for the Reid/HMPL Barge unloader, conveyors, and boiler units are in need of painting. This condition is the same as last year's walk through.
- The river water intake structure has numerous water and oil leaks from the pumps. This coupled with the algae growth and considerable trash on the structure presents a hazardous situation.
- The dessicators on all plant sulfuric acid storage and day tanks require inspection and/or replacement. This condition is unchanged from the 2001 walk through. These dessicant vents are critical in preventing moisture from getting into the tanks that can aggravate metal corrosion and the generation and accumulation of hydrogen gas.
- There have been numerous equipment inspection reports provided in 2001 and 2002 to date by vendors with operating and/or maintenance recommendations (i.e., turbines, cooling towers, etc). See Appendix C. It is unknown to BREC how many if any of these recommendations have been implemented.
- Much of the insulation and lagging on equipment, piping systems, and ductwork (especially from the secondary air heaters out to the FGD module inlets on both units) is

- The Reid/HMPL Station's deteriorated heat rate is likely due to fuel quality, deterioration of equipment and/or lack of calibration of instrumentation.
- WKE has taken steps since 1998 to increase Reid Unit, HMPL Unit 1 and HMPL Unit 2 EAFs, GCFs, and GOFs. These steps are fewer and shorter planned outages, and operating the units above their design capacities. Fuel related opacity derates on the HMPL units and numerous forced outages due to superheater tube failures on the HMPL units in 2001 and 2002 have depressed these performance factors in the last couple of years. WKE is utilizing the Reid Unit and the Reid CT much more than it was utilized during BREC years of operation.
- The increases in the HMPL Unit 1 and HMPL Unit 2 FORs and EFORs can be mainly attributed to fuel related opacity derates and super heater tube failures. Inspections indicate that these precipitators are in need of a preventative maintenance program. The tube sections are over 20 years old. BREC reported these tubes began failing at an accelerated rate shortly after WKE began burning pet coke in these units.
- Kentucky boiler re-certification for insurance purposes is required at least every 18 months. The "pit stops" potentially aren't long enough for adequate inspection by the insurance inspectors.
- Unit starts are physically hard on boilers and equipment. Increased unit starts per year will require increased upkeep efforts and dollars.
- The lack of general maintenance and attempts to correct it in short outages, without an on-going preventative maintenance effort, is contrary to normal utility practices. This lack of maintenance will shift costs from maintenance to capital projects, and could result in additional expenditures by BREC.
- A number of additions and modifications have been made at Reid/HMPL to accommodate a much broader range of fuels. For example the fuel blending system, truck hoppers, conveyors and transfer points. The farther these fuels range from unit design the more the fuel will impact upkeep of the station.
- The use of petroleum coke has the potential for increased cold-end corrosion, erosion of fuel handling and grinding equipment, problematic boiler slag formation, risk of furnace flameout and explosion, and other problems.
- The use of dynamite for boiler slag control is a method of last resort. Other methods that would be considered prudent utility practice are controlling the fuel quality, adequate soot blowing, and/or shedding load.
- The barge unloader, coal conveyors, and boiler structural steel on all the units is in need of paint. The units may be experiencing weakening of the structures, mechanical damage, and failure of supports.

6. HMPL Unit 1, HMPL Unit 2 and the Reid Unit should be restricted to burning no more than 20 percent pet coke to avoid long-term detrimental effects on the life of the unit. This is based upon industry-wide experience to date.
7. Based on site visits to other utilities having situations similar to BREC (plant operation by other companies), BREC should consider having BREC personnel located at Reid/HMPL Station.
8. A full deaerator inspection, including magnetic particle inspection of all welds should be performed every five years. HMPL Unit 1 DA and HMPL Unit 2 DA were inspected in 1999 and 2000, respectively. WKE should keep BREC informed of any upcoming inspections for the deaerators.
9. The water treatment program at Reid/HMPL Station should be audited for how it complies with the EPRI guidelines.
10. The precipitators need some attention on the two HMPL units. It is recommended that WKE establish a preventative maintenance program and the repairs be performed as recommended in the 3rd party inspection reports referenced in Appendix C. It is unknown to BREC if any of the recommendations or repairs from the reports have been performed.
11. WKE should provide BREC with a specific schedule for inspection of High Energy (HE) piping, seamed or not. A complete pipe hanger and support inspection is required at all units. Inspection of all main steam, cold reheat, hot reheat and other piping system supports should be performed. All external attachments to main steam piping should be checked. This inspection should be performed every five years. A comprehensive report should be submitted to WKE and BREC noting the hanger and support conditions including rusted cans, disconnections, miss-positioned, over- or under-loaded units. A program of adjustment, repair, and replacement should then be implemented. WKE should provide BREC a specific schedule when high energy (HE) piping (BFP discharge forward), seamed or not, is to be inspected by NDE. This was a recommendation from the "1998 Depreciation Study," and very little inspection has occurred since that time.
12. A program of regular housekeeping should be implemented by WKE.
13. There are numerous safety and electrical hazards present and electrical code violations. These hazards range from minor to serious. There are significant risks to both personnel and equipment. Safety and electrical hazards/code violations should be addressed.
14. An instrument calibration preventative maintenance program should be instituted at Reid/HMPL Station.
15. Piping and ductwork insulation and lagging should be repaired or replaced.
16. WKE should perform, at a minimum, annual full load (capacity) tests on the Reid Unit, HMPL Unit 1, and HMPL Unit 2 as described in the LEC Agreements under

- 28 The reagent preparation area is not being operated or maintained properly. WKE should institute a regular preventative maintenance program in this area of the plant.

Section 1 – Summary of Site Visit Observations and Third-Party Report Issues

Major, safety, and legal issues from various reports provided by BREC are summarized into the appropriate categories and systems. The categories are broken down into the following groups: Mechanical/Civil, General, Processes, Electrical, Instruments & Controls, Structural, Operation, and Environmental, Health and Safety (EHS).

Section 2 – Major Projects by WKE

This section presents a summary of major work items at Reid/HMPL Station, which were completed during the period 1998 through September 30, 2002. This information was provided by BREC. BREC has confirmed that all the listed work was completed.

Section 3 – Comparison with Similar Units

This section compares the current condition of the Reid/HMPL Station to that of Plant No. 1, Plant No. 3, and Plant No. 5. Photos of the generating stations are shown in Appendix D – Plant Pictures. Also shown and discussed in Section 3 are the GADS data for Reid/HMPL Station as well as the GADS data for a number of other similar sized generating units in the range of 100 to 199 Megawatts (MW) and in the range 1 to 99 MW.

Appendices

Appendix A – Detailed Site Visit Observations - Includes all on-site observations by SCI and SCI/Operation and Maintenance Representatives.

Appendix B – Staffing Charts and Safety Data including information on staffing during BREC's and WKE's periods of operation of Reid/HMPL Station, and safety information such as lost time injuries, KOSHA recordable injuries and incident rates.

Appendix C – Open or Pending items from Equipment Inspection Reports- Summarized in this Appendix are open or pending items from equipment inspection reports and major outage work order items.

Appendix D – Plant Pictures presents photos of various pieces of equipment and site conditions at BREC's Reid/HMPL Station and three other facilities that were visited.

Appendix E – Operations and Performance Data. This appendix includes BREC provided load data, outage charts, boiler water analysis spreadsheets and graphs, FGD analysis spreadsheets, and an SCI prepared Petroleum Coke Firing Considerations Letter Report.

Appendix F – Open Items from 1998 Depreciation Study. This Appendix includes portions of the document entitled "Report on the Comprehensive Depreciation Study for Big Rivers Electric Corporation, Henderson, Kentucky, 1998." Only those portions of the study dealing with

Robert A. Reid/HMPL

Station Two

Annual Condition Assessment Report

Big Rivers Electric Corporation
Henderson, Kentucky

Final
December 31, 2003

CONFIDENTIAL



Stanley Consultants INC.

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Engineering, Environmental and Construction Services - Worldwide

Executive Summary

This Executive Summary presents a brief description of the detailed information contained in this report, conclusions drawn from that information, and recommendations to Big Rivers Electric Corporation. These descriptions follow the same format as the report.

General

Big Rivers Electric Corporation (BREC) commissioned Stanley Consultants, Inc. (Stanley), of Muscatine, Iowa, to observe and comment on Western Kentucky Energy's (WKE) operation and maintenance of the Robert A. Reid (Reid) unit and the two Henderson Municipal Power & Light (HMPL) units compared to prudent utility practice; and how WKE's operation and maintenance is reflected in year-to-year changes in the condition of these units. The specific equipment addressed in this report, is known as the Robert A. Reid/HMPL Station Two (Reid/HMPL) and includes the power plant, site, and all associated facilities. The Reid/HMPL Station is presently being operated and maintained by WKE, a subsidiary of LG&E Energy Corporation (LEC), under terms of a 25-year agreement.

Purpose

BREC wishes to assure to the extent possible, that, at the expiration of the 25-year agreement, the Reid/HMPL Station will be returned in a reasonable condition, allowing for normal wear and tear. The Reid/HMPL Station should be restored to the condition that existed at the time it was turned over to WKE, except for the normal aging of components. It should be noted that the condition of the Reid/HMPL Station at the time WKE assumed operation (mid-1998) is unknown to Stanley personnel.

System No. 15 Fire Water
System No. 16 Makeup Water Pretreatment
System No. 17 Demineralizers
System No. 18 Circulating Cooling Water
System No. 19 Service Water
System No. 20 Closed Cooling Water

System No. 21 Wastewater Pretreatment
System No. 22 Condensate System
System No. 23 Condensate Polishing
System No. 24 Auxiliary Steam
System No. 25 Feedwater
System No. 26 Boiler Water Sampling
System No. 27 Boiler Chemical Feed
System No. 28 Air Extraction (Condenser)
System No. 29 Coal Handling
System No. 30 Ignition Oil

System No. 31 Steam Generator
System No. 32 Combustion Air
System No. 33 Fuel Burning Equipment
System No. 38 Precipitators
System No. 39 Lube Oil Purification
System No. 40 Turbine-Generator

System No. 41 Lube Oil
System No. 43 Electro-Hydraulic Control (EHC)
System No. 45 Turbine Steam Seals
System No. 47 Carbon Dioxide and Hydrogen (CO₂ and H₂)
System No. 48 Seal Oil

System No. 52 Main Power
System No. 53 Bottom Ash/Fly Ash Handling
System No. 54 Heater Vents and Drains, Extraction
System No. 55 Main and Reheat Steam
System No. 56 Flue Gas Desulfurization (FGD)
System No. 59.1 Site Drainage
System No. 59.3 Sewage Treatment

System No. 60 Secondary Sludge (FGD) Dewatering
System No. 61 Selective Catalytic Reduction (SCR)
System No. 62 Coal Re-burn
System No. 63 Rotating Opposed Overfire Air (ROFA)
System No. 64 Combustion Turbine (CT)
System No. N/A Item does not belong to any of the above systems

- Reid/HMPL Station's "employee per megawatt (MW)" ratio this year is 0.23. This ratio is the same as last year. Reid/HMPL Station's number of full-time employees per megawatt (MW) of capacity is higher than the other stations surveyed, except for Plant No. 5. It is important to note that this ratio is particularly sensitive to "site complexity."
- There appears to be significant differences in staffing practices at Reid/HMPL Station compared to other stations operated by WKE.
- WKE utilizes a large amount of outside (contract) labor at Reid/HMPL Station.
- Reid/HMPL Station's incident rate has decreased since last year. Reid/HMPL Station's recordable injuries have increased slightly this year compared to 2002 reported numbers.
- A fuel blending system was added to the coal handling system in 2000. Numerous conveyor and transfer point modifications have also been made to-date.
- A number of plant system controls have been replaced or upgraded by WKE since last year. For example, demineralized water control system, Reid unit digital controls – stack emissions, HMPL Units 1 and 2 digital controls – stack emissions, HMPL Units 1 and 2 precipitator rapper controls, and Reid Combustion Turbine Continuous Emissions Monitoring (CEM) system have been replaced or installed. It appears that the original controls should still have had useful life remaining and spare parts should still be obtainable. BREC should request evidence that the original controls required replacement for reasons other than efficiency gain and reduction in operator effort.
- HMPL Units 1 and 2 yearly generation through 2002 has increased slightly since BREC years of operation. The Reid unit yearly generation through 2002 has increased from approximately 300,000 MWh in 2000 to approximately 400,000 MWh in 2002. Complete generation data for 2003 was not available at the time of this writing.
- The HMPL units' heat rates have deteriorated by approximately 500 Btu/kW-hr since WKE began operation in 1998 through August 2003. Reid unit heat rates have deteriorated by approximately 800 Btu/kW-hr since 1998.
- HMPL Unit 1 Equivalent Availability Factors (EAFs) since 1998 have averaged slightly higher than during BREC years of operation and slightly higher than annual North American Electric Reliability Council/Generating Availability Data System (NERC/GADs) averages. HMPL Unit 2 EAFs have been decreasing since 1999 and are below annual NERC/GADs averages. The Reid unit EAFs fluctuated around the annual NERC/GADs averages. WKE is utilizing the Reid unit more than BREC did.
- Gross Output Factors (GOFs) for both HMPL units are above BREC years of operation and are well above the annual NERC/GADs averages. The Reid unit GOFs have been above the annual NERC/GADs averages since 1999. Since 2000, the Reid unit appears to be assuming more base load and voltage support duty.

2003. BREC reported that the remainder of the budgeted capital dollars each year have gone toward *performance/efficiency projects*.

- BREC reported that Reid/HMPL Station maintenance man-hours expended per year averaged over 95,000 per year during BREC years of operation. BREC reported that WKE heavily utilizes outside contractors to perform maintenance work, but does not track the contractor maintenance man-hours. Last year BREC misunderstood WKE to say that maintenance man-hours did include contract labor. BREC clarified with WKE this year that the reported maintenance man-hours do NOT include contract labor. Since WKE does not track contractor maintenance man-hours there is insufficient data to draw any definitive conclusions with respect to maintenance man-hours as a percent of total man-hours
- The boilers and enclosures were as dirty as they were during the 2002 walk-through. Considerable ash, coal dust and trash were on top of boiler backpasses, secondary and primary air ducts as well as on top of Forced Draft (FD) fans. When wet this will aggravate corrosion and when dry this presents a fire hazard.
- There were significant boiler gas leaks under the lagging on north side, as well as the top, of Reid unit. HMPL Unit 1 wind box was corroded with numerous gas leaks. There was evidence of considerable flue gas leaks and corrosion on HMPL Unit 1 backpass lagging especially at the economizer inlet valve. There was considerable corrosion on and around the HMPL Units 1 and 2 secondary air heaters. Lagging on HMPL Units 1 and 2 booster fans were corroded away due to flue gas leaks. This presents a burn hazard and breathing hazard to personnel.
- There are many examples of poor preventative maintenance practices for instruments/controls calibrations.
- There are many junction boxes and electrical panels all over the plant site that are left open and debris accumulates in them.
- There are many instances of improper lighting found throughout the plant.
- The plant insurer has made numerous recommendations for additional fire protection measures to be installed on different site systems.
- There are numerous examples of fire hoses not stored properly, fire hydrants in disrepair, fire extinguishers not properly installed, extinguishers missing inspection cards or cards were out of date and the fire water jockey pump was running continuously.
- Many site examples were found and documented of poor preventative maintenance, and poor corrective maintenance practices, especially electrical maintenance.
- There have been numerous equipment inspection reports provided in 2001 through 2003 to-date by vendors with operating and/or maintenance recommendations (turbines,

- Approximately 50 percent of the major spring hanger cans are rusted through and/or hanging from the boilers' structural steel. There are many cases of broken pipe U-bolts, missing hanger rods, or rods that are not connected to the hanger. This results in long runs of unsupported pipe
- There are numerous locations at various elevations on HMPL Units 1 and 2, where buckstay boiler clips may have broken or loosened. This should be checked by removing the insulation and lagging.
- The dessicant on all plant sulfuric acid storage and day tanks require inspection and/or replacement. This condition is unchanged from the previous walk-throughs. These vents are critical in preventing moisture from getting into the tanks that can aggravate metal corrosion and the generation and accumulation of hydrogen gas.
- BREC reported that the percent sulfur coal the HMPL units have been burning is higher than pre-1998 resulting in equipment processing more tons of sulfur dioxide per year. There are a number of scrubber process parameters that directly impact the required upkeep of the FGD/CSI system at Green Station. The percent sulfur in the coal impacts the tons of material being processed in the scrubber and at CSI. The percent module solids and percent filter cake solids impact the tons of material processed at CSI. The module pH and dissolved chloride content impact corrosion of system equipment. The percent oxidation rate in the modules impacts the scaling up of system equipment. All the above mentioned scrubber process parameters ultimately impact BREC costs. BREC reported that WKE is controlling modules percent solids at slightly higher level solids from mid-1998 through December 2002. Thus a net-negative impact is seen on tons processed at Conversion Systems Incorporated (CSI) building. Module solids have been generally above the target module solids of 3 percent from January 2000 through December 2002. BREC reported that module dissolved chloride concentrations are lower than pre-1998 and continues through December 2002. This would help minimize corrosion of system components, however, module chlorides on both HMPL units have been rising since November 2001. WKE provided very little pH data during the period January 2000 through December 2002. There is insufficient data to compare to the target pH of 6.5 to ascertain whether pH is aggravating corrosion. BREC reported that the percent oxidation rate in the modules appears to be generally within 5 percent of the target oxidation rate of 15 percent during the period from January 2000 through December 2002. WKE declined to provide the requested 2003 FGD/CSI analyses
- WKE expended \$37,000 capital dollars in 2000 for FGD upkeep, \$109,000 in 2001, \$0 in 2000, and \$256,000 through August 2003. BREC reported that FGD/CSI upkeep expenditures averaged \$1.3 million dollars per year during BREC years of operation.
- In the FGD area, conduit is corroded to the point that the electrical conductors are exposed. It is likely that the corrosion is caused by sulfur dioxide fumes leaking from the flue gas ductwork in this area.

- HMPL Station mild steel corrosion rate data was provided from February 1999 through the fourth quarter in 2002 for the open re-circulating cooling water system. The industry standard maximum corrosion rate of mild steel within an open re-circulating cooling water system is 3.0 mils per year (mpy). None of the corrosion samples taken have been at or below the industry standard since 1999. A peak of 29.5 mpy was observed with the April 2002 sample. Depending on individual pipe wall thickness and local stresses, it may not take long for a pipe to fail due to metal loss. This peak is nearly ten times the recommended corrosion rate.
- HMPL Station 90 Cu/10 Ni corrosion rate data was provided from February 1999 through the fourth quarter in 2002 for the open re-circulating cooling water system. The industry standard maximum corrosion rate of 90 Cu/10 Ni alloys within an open re-circulating cooling water system is 0.2 mils per year (mpy). HMPL Station has been at or below the industry standard 67 percent of the time with a peak of 0.6 mpy in June 1999.
- WKE declined to provide the requested 2003 boiler water analyses. January 2000 through December 2002 was reviewed. HMPL Unit 1 boiler water analyses indicate that pH generally exceeds Electric Power Research Institute (EPRI) guidelines. This indicates some corrosion mechanism of boiler and/or feed water metallurgy. HMPL Unit 1 boiler feedwater quality and condensate quality were found to be above recommended guidelines, 15 – 21 percent of the time for iron (Fe) and 26 – 29 percent of the time for copper (Cu). Conductivity from the condensate discharge pump sample was above the EPRI recommended guidelines 100 percent of the time. Dissolved oxygen (DO₂) levels from the condensate discharge pumps to the deaerator were not reported. All EPRI recommended sampling points and frequency do not appear to be followed. HMPL Unit 1 was last chemically cleaned in 1997.
- WKE declined to provide the requested 2003 boiler water analyses. January 2000 through December 2002 was reviewed. HMPL Unit 2 boiler water analyses indicate that pH generally exceeds EPRI guidelines. This indicates some corrosion mechanism of boiler and/or feed water metallurgy. HMPL Unit 2 boiler feedwater quality and condensate quality were found to be generally within guidelines for the amount of iron dissolved. However, the amount of copper (Cu) dissolved in the feedwater exceeded recommended EPRI guidelines 53 percent of the time. Conductivity from the condensate discharge pump sample was above the EPRI recommended guidelines 100 percent of the time. Dissolved oxygen (DO₂) levels from the condensate discharge pumps to the deaerator were not reported. All EPRI recommended sampling points and frequency do not appear to be followed. HMPL Unit 2 was last chemically cleaned in 1998.
- WKE declined to provide the requested 2003 boiler water analyses. January 2000 through December 2002 was reviewed. The Reid unit boiler water analyses indicate that pH generally exceeds EPRI guidelines. This indicates some corrosion mechanism of boiler and/or feed water metallurgy. The amount of iron (Fe) dissolved in the feedwater and condensate exceeded operating guidelines 3 percent of the time. The amount of copper (Cu) in the feedwater and condensate exceeded operation guidelines 32 – 35 percent of the time. Conductivity from the condensate discharge pump sample was

HMPL units and numerous forced outages due to superheater tube failures on the HMPL units in 2001 and 2002 have depressed these performance factors in the last couple of years. BREC reported that WKE is utilizing the Reid unit and the Reid CT much more than it was utilized during BREC years of operation.

- HMPL Station's yearly generation is up slightly compared to when BREC operated the plant. The Reid unit yearly generation values indicate that WKE is utilizing this unit more frequently than BREC did. Complete generation data for 2003 was not available at the time of this writing.
- Although no infrared inspection reports have been received to-date for the HMPL units and the Reid unit, the need to conduct annual inspections of the medium and high voltage electrical equipment remains. Contamination and coal dust has been observed throughout the plant. During scheduled outages WKE should clean and inspect electrical switches and contacts and breakers to reduce the likelihood of failure during operation. During actual operation of the electrical equipment, opening or closing of breakers or switches presents the highest probability for failure.
- The increases in the HMPL Units 1 and 2 FORs and EFORs can be mainly attributed to fuel related opacity derates and superheater tube failures. Replacement of the HMPL Unit 1 superheater during the Spring 2003 outage should help HMPL Unit 1 FORs and EFORs.
- Unit starts create additional wear on boilers and equipment. Increased unit starts per year will require increased upkeep efforts and costs.
- Kentucky state boiler re-certification for insurance purposes is required at least every 18 months. The "pit stops" may not be long enough for adequate inspection by the insurance inspectors.
- Typically, boilers are chemically cleaned about every 5 years. The Reid unit has not been chemically cleaned in over 15 years. It is expected that it should have required cleaning before now. HMPL Unit 1 has not been chemically cleaned in 6 years. HMPL Unit 2 has not been chemically cleaned in 5 years. It is expected that WKE should be scheduling cleaning for these units.
- According to WKE's 20-year outage schedule, WKE is planning on extending turbine-generator overhauls to 8 and 9 years. Typically, turbine-generators are overhauled every 5 years.
- The boiler water treatment program at Reid/HMPL Station does not meet recommended EPRI guidelines.
- Damaged insulation on hot piping systems and equipment presents a burn hazard to personnel.

corrosion on the beam stiffeners. There are weep/drain holes in the beams but these will not work unless the beam stiffeners are cleaned out.

- BREC reported that the FGD/CSI systems are working harder than prior to 1998, processing and removing more tons of SO₂, reagent and sludge.
- The reagent preparation area is not being operated or maintained adequately.

Recommendations

Of the 33 recommendations listed below, item numbers 1 – 27 are the same as last year. No progress has been made on these items. Item numbers 28 – 33 are new recommendations.

1. A plant safety audit should be conducted immediately and signs posted until all repairs and cleanup are done. A "voluntary" OSHA inspection is recommended. OSHA would advise of any problems and provide time to institute corrections or repairs. No fines could be imposed due to this voluntary inspection unless corrections are not made.
2. Any modifications or additions to the electrical system shall be National Electrical Code (NEC) compliant.
3. A program of continuous preventative maintenance should be instituted at Reid/HMPL Station.
4. All major items of equipment listed above should be repaired, serviced and placed back into operation, or BREC should be guaranteed that they will be restored to original functionality before the end of the agreement.
5. A "Lockout/Tagout" program should be implemented, or enforced if a program is already in place.
6. HMPL Unit 1, HMPL Unit 2, and the Reid unit should be restricted to burning no more than 20 percent pct coke to avoid long-term detrimental effects on the life of the units. This is based upon industry-wide experience to-date.
7. Based on site visits to other utilities having situations similar to BREC (plant operation by other companies), BREC should consider having BREC personnel located at Reid/HMPL Station.
8. A full deaerator (DA) inspection, including magnetic particle inspection of all welds should be performed every 5 years. HMPL Unit 1 DA and HMPL Unit 2 DA were inspected in 1999 and 2000, respectively. WKE should keep BREC informed of the inspection schedule for these deaerators.
9. The boiler water treatment program at Reid/HMPL Station should be audited for compliance with the recommended EPRI guidelines.

- 19 WKE should institute a regular maintenance program on switchgear, bus work, motor controls, and connections. This program should include infrared thermal imaging surveys be completed on an annual basis to identify problem areas.
20. Due to pet coke being burned in the units, a regular program of sampling boiler, economizer, superheater and reheater tubes should be implemented. In addition, an annual review of the recorded boiler operating temperatures and pressures as compared to design parameters should be performed.
21. The structural steel on the barge unloader, coal conveyors, and Reid unit, HMPL Unit 1, and HMPL Unit 2 should be properly prepared, primed and painted as soon as possible.
22. Plant distribution electrical systems including conduit and cable trays need to be repaired or replaced. Lighting deficiencies should be repaired or replaced
23. Junction boxes and panels need to be cleaned out and the covers replaced and secured.
24. There are numerous and various types of third-party inspection reports regarding different plant systems. These reports have numerous recommendations. WKE should provide information to BREC as to whether these recommendations have been implemented.
25. WKE should already have plans in place to chemically clean the Reid unit as soon as possible.
26. WKE should implement a program of regular inspection and replacement of dessicant vents on the sulfuric acid tank to ensure the situation does not result in excessive corrosion or hydrogen generation and potential explosion hazards.
27. The reagent preparation area is not being operated or maintained properly. WKE should institute a regular preventative maintenance program in this area of the plant.
- 28 WKE should perform operational valve tests on the Reid unit and HMPL Units 1 and 2.
29. WKE is planning to overhaul the HMPL Unit 2 turbine-generator during the Spring 2004 outage.
- 30 WKE should take tube samples to determine the need for HMPL Units 1 and 2 chemical cleaning, and then schedule the chemical cleanings if required.
31. The Reid unit and HMPL Units 1 and 2 flues are in poor condition. Ductwork should be replaced including insulation and lagging.
32. HMPL Unit 2 superheater should be replaced

Appendix G – Public Service Commission (PSC) Report, April 29, 2003, includes comments pertaining to Reid/HMPL Station that were excerpted from BREC's April 29, 2003, letter to the Kentucky PSC.


Appendix H – Net Book Value (NBV) Report and Construction Work In Progress (CWIP) Report Data. This Appendix includes a summary of items acquired during the time period of October 1, 2002 through September 30, 2003. These items were derived from the Net Book Value Report and the Construction Work In Progress Report.

Appendix I – WKE Newsletters – This Appendix Contains copies of the WKE newsletter provided by BREC

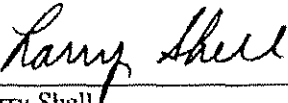
Respectfully submitted,

Stanley Consultants, Inc.


Prepared by

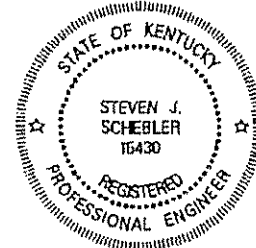

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Robert A. Reid/HMPL

Station Two

Annual Condition Assessment Report

Big Rivers Electric Corporation
Henderson, Kentucky

Final
December 31, 2004

CONFIDENTIAL

This document is confidential in accordance with the terms of Stanley Consultant's agreement with Big Rivers Electric Corporation dated April 14, 2000.



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General

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Purpose

BREC wishes to assure to the extent possible that at the expiration of the 25-year agreement, the Reid/HMPL Station will be returned in Acceptable Condition, allowing for normal wear and tear. It should be noted that the condition of the Reid/HMPL Station at the time WKE assumed operation (mid-1998) is unknown to Stanley Consultants' personnel.

System No. 15 Fire Water
System No. 16 Makeup Water Pretreatment
System No. 17 Demineralizers
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System No. 20 Closed Cooling Water

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System No. 23 Condensate Polishing
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System No. 31 Steam Generator
System No. 32 Combustion Air
System No. 33 *Fuel Burning Equipment*
System No. 38 Precipitators
System No. 39 Lube Oil Purification
System No. 40 Turbine-Generator

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System No. 55 Main and Reheat Steam
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System No. 60 Secondary Sludge (FGD) Dewatering
System No. 61 Selective Catalytic Reduction (SCR)
System No. 62 Coal Re-burn
System No. 63 Advanced Overfire Air (AOFA)
System No. 64 Combustion Turbine (CT)
System No. N/A Item does not belong to any of the above systems

- Reid/HMPL Station's "salaried to hourly" employee ratio this year is 0.27. This ratio is slightly higher than last year. Comparison Plants No. 1, 3, and 4 had lower ratios. Comparison Plant No. 5, Wilson Station, and Coleman Station's ratios are higher.
- Reid/HMPL Station's "employee per megawatt (MW)" ratio this year is 0.24. This ratio is slightly higher than last year. Comparison Plants No. 1, 3, 4, Wilson Station and Coleman Station have lower ratios. It is important to note that this ratio is particularly sensitive to "site complexity."
- There appears to be significant differences in staffing practices at Reid/HMPL Station compared to other stations operated by WKE.
- WKE utilizes a large amount of outside (contract) labor at Reid/HMPL Station.
- Reid/HMPL Station's incident rate has decreased in 2003. Reid/HMPL Station's recordable injuries have increased in 2003. WKE has not provided 2004 safety data as of the time of this writing.
- A fuel blending system was added to the coal handling system in 2000. Numerous conveyor and transfer point modifications have also been made to-date to facilitate burning numerous different fuel types.
- HMPL Units 1 and 2 annual generation has generally been decreasing since 2000. The Reid unit annual generation has increased significantly when compared to pre-1998 operation.
- The HMPL units' heat rates had deteriorated approximately 400 to 700 Btu/kWh since WKE began operation in 1998. The heat rates have improved since turbine-generator overhauls were performed on these units in 2003 and 2004 and reduced unit load. Reid unit heat rates have deteriorated by approximately 700 Btu/kWh since mid-July 1998.
- HMPL Unit 1 Equivalent Availability Factors (EAFs) dropped to below the annual North American Electric Reliability Council/Generating Availability Data System (NERC/GADs) averages in 2003. EAFs started to decline in 2000. Superheater problems were the main cause of performance declines. Also, a boiler overheating event in August will impact the 2004 year end EAF.
- HMPL Unit 2 EAFs have been decreasing since 1999 to below annual NERC/GADs averages. Superheater problems were the main cause of performance declines in HMPL Unit 2. HMPL Unit 2 superheater was replaced during the spring 2004 outage. HMPL Unit 2 had numerous turbine control-related outages in 2004.
- The Reid unit EAFs have generally fluctuated around the annual NERC/GADs averages until 2004. WKE is utilizing the Reid unit more than prior to 1998 operation.
- HMPL Units 1 and 2 Forced Outage Rates (FORs) and Equivalent Forced Outage Rates (EFORs) had been trending up since 2000. HMPL Units 1 and 2 FORs and EFORs have been well above the annual NERC/GADs averages since 2001. Superheater problems

- Of the WKE budgeted capital dollars BREC has shared, 92 percent in 2000, 69 percent in 2001, 84 percent in 2002, 83 percent in 2003, and 89 percent through August 2004. BREC reported that the remainder of the budgeted capital dollars each year appears to have gone toward performance/efficiency projects.
- BREC reported that Reid/HMPL Station maintenance man-hours expended per year averaged over 95,000 per year prior to 1998. BREC reported that WKE heavily utilizes outside contractors to perform maintenance work, but does not track the contractor maintenance man-hours. Since WKE does not track contractor maintenance man-hours there is insufficient data to draw any definitive conclusions or comparisons with respect to maintenance man-hours worked
- The boilers and enclosures were as dirty as during the 2003 walk-through. Considerable ash, coal dust and trash were on top of boiler backpasses, secondary, and primary air ducts as well as on top of Forced Draft (FD) fans. In the enclosures, this could present a fire hazard. When wet this will aggravate corrosion and when dry this presents a fire hazard.
- There were significant boiler gas leaks under the lagging on the north side, as well as the top, of Reid unit HMPL. Unit 1 wind box was corroded with numerous gas leaks. There was evidence of considerable flue gas leaks and corrosion on HMPL Unit 1 backpass lagging especially at the economizer inlet valve. There was considerable corrosion on and around the HMPL Units 1 and 2 secondary air heaters. Lagging on HMPL Units 1 and 2 booster fans were corroded away due to flue gas leaks. This presents a burn hazard and breathing hazard to personnel.
- There are many examples of poor preventative maintenance practices for instruments/controls calibrations. Instruments and controls have not been calibrated in recent years. See Appendix A for examples.
- There are many junction boxes and electrical panels all over the plant site that are left open and debris accumulates in them. See Appendix A for examples.
- There are many instances of improper lighting found throughout the plant. See Appendix A for examples.
- The plant insurer has made numerous recommendations for additional fire protection measures to be installed on different site systems.
- There are numerous examples of fire hoses not stored properly, fire hydrants in disrepair, fire extinguishers not properly installed and extinguishers missing inspection cards or cards were out of date. See Appendix A for examples.
- Many site examples were found and documented of poor preventative maintenance, and poor corrective maintenance practices, especially electrical maintenance. See Appendices A and C for examples.

furnace tubes not replaced in the side and front walls during the August-September repair outage are bowed to varying degrees between buckstay elevations. Also clearly, many of the buckstay clips have all been stressed to some degree, a fact supported by the sheer number of clips that failed during the incident. The physical and microstructural condition of the furnace walls suggest that short and medium term reliability should be a concern, and that more comprehensive repairs are justified.

- There were numerous locations at various elevations on HMPL Units 1 and 2, where buckstay boiler clips may have broken or loosened. This should be checked by removing the insulation and lagging.
- The desiccant on all plant sulfuric acid storage and day tanks require inspection and/or replacement. This condition is unchanged from the previous walk-through. These vents are critical in preventing moisture from getting into the tanks that can aggravate metal corrosion and the generation and accumulation of hydrogen gas.
- There are a number of scrubber process parameters that directly impact the required upkeep of the FGD and Conversion System Incorporated (CSI) system at HMPL Station. The main factors influencing maintenance costs of the FGD system and dewatering system are percent sulfur in fuel, chlorides, percent solids, oxidation, and filter cake solids. The following scrubber process parameters ultimately impact BREC costs.
 - The percent sulfur in the fuel impacts the tons of material being processed in the scrubber and at the CSI building. BREC reported that the percent sulfur fuel the HMPL units have been burning is higher than pre-1998 resulting in equipment processing more tons per year.
 - The percent module solids and percent filter cake solids impact the tons of material processed at CSI building.
 - The module pH and dissolved chloride content impacts corrosion of system equipment. BREC reported that module dissolved chloride concentrations are lower than pre-1998. This would help minimize corrosion of system components. Very little data was available for HMPL Units 1 and 2 module pH. Data was provided from January 2000 through July 2000. After July 2000, only two data points were provided. It is unknown after July 2000 whether the module pH is averaging near the target pH rate of 6.5.
 - The percent oxidation rate in the modules impacts the build up of scale on system equipment. Since HMPL Units 1 and 2 are above 15 percent oxidation approximately 61 percent of the time this would indicate a possible increase in scale build up on system components.
- In the FGD area, conduit is corroded to the point that the electrical conductors are exposed. It is likely that the corrosion is caused by sulfur dioxide fumes leaking from the flue gas ductwork in this area.

- HMPL Station provided 90 Cu/10 Ni alloy corrosion rate data for the open re-circulating cooling water system from October 1998 through January 2003. WKE has not provided data for the remainder of 2003 and 2004. HMPL Station 90 Cu/10 Ni alloy corrosion rates have been at or below the industry standard 67 percent of the time with a peak of 0.6 mpy in June 1999.
- HMPL Station mild steel and copper corrosion rate data was provided from February 1999 to January 2003, for the closed cooling water system. WKE has not provided data for the remainder of 2003 and 2004. Since February 1999, corrosion rates for mild steel and copper in the closed cooling water systems at HMPL Station have consistently been below the industry standard.
- HMPL Unit 1 boiler water analyses for the period from January 2000 through October 2004 indicate that pH generally was outside of Electric Power Research Institute (EPRI) guidelines. Operating outside of the recommended guidelines increases corrosion of boiler and/or feedwater metallurgy. HMPL Unit 1 boiler feedwater quality and condensate quality were found to be outside of recommended guidelines 10 – 11 percent of the time for iron (Fe) and 24 – 32 percent of the time for copper (Cu). Conductivity from the condensate discharge pump sample was outside of EPRI recommended guidelines 100 percent of the time. Dissolved oxygen (DO₂) levels from the condensate discharge pumps to the deaerator were not reported. EPRI recommended sampling points and frequency do not appear to be followed.
- HMPL Unit 2 boiler water analyses for the period from January 2000 through October 2004 indicate that pH generally was outside of EPRI guidelines. Operating outside of the recommended guidelines increases corrosion of boiler and/or feed water metallurgy. HMPL Unit 2 boiler feedwater quality and condensate quality were found to be outside of recommended guidelines 7 to 17 percent of the time for the amount of iron (Fe) dissolved. The amount of copper (Cu) dissolved in the feedwater and condensate was outside of recommended EPRI guidelines 63 and 27 percent of the time, respectively. Conductivity from the condensate discharge pump sample was outside of EPRI recommended guidelines 100 percent of the time. Dissolved oxygen (DO₂) levels from the condensate discharge pumps to the deaerator were not reported. EPRI recommended sampling points and frequency do not appear to be followed.
- WKE declined to provide the requested 2004 boiler water analyses for the Reid unit. January 2000 through December 2003 was reviewed. The Reid unit boiler water analyses indicate that pH generally was outside of EPRI guidelines. Operating outside of the recommended guidelines increases corrosion of boiler and/or feed water metallurgy. The amount of iron (Fe) dissolved in the condensate and feedwater was outside of operating guidelines 5 to 8 percent of the time. The amount of copper (Cu) in the condensate and feedwater was outside of operation guidelines 44 – 63 percent of the time. Conductivity from the condensate discharge pump sample was outside of EPRI recommended guidelines 100 percent of the time. Dissolved oxygen (DO₂) levels from the condensate discharge pumps to the deaerator were not reported. EPRI recommended sampling points and frequency do not appear to be followed.

- The Reid unit yearly generation values indicate that WKE is utilizing this unit more than prior to 1998.
- Infrared inspection reports to-date confirm the need to conduct annual inspection of the medium- and high-voltage electrical equipment. Contamination and coal dust has been observed throughout the plant. During scheduled outages WKE should clean and inspect electrical switches and contacts and breakers to reduce the likelihood of failure during operation. During actual operation of the electrical equipment, opening or closing of breakers or switches presents the highest probability for failure.
- The increases in the HMPL Units 1 and 2 FORs and EFORs can be mainly attributed to fuel related opacity derates, turbine-generator controls change out, and superheater tube failures.
- Unit starts create additional wear on boilers and equipment. Increased HMPL and Reid unit starts per year will require increased upkeep efforts and costs.
- Kentucky state boiler re-certification for insurance purposes is required at least every 18 months. The "pit stops" may not be long enough for adequate inspection by the insurance inspectors.
- Typically, boilers are chemically cleaned about every 5 years. HMPL Unit 1 has not been chemically cleaned in 7 years. HMPL Unit 2 has not been chemically cleaned in 6 years. It is expected that HMPL Units 1 and 2 require cleaning at this time.
- It is unknown whether WKE's overall NO_x compliance plan for the first OTAG season was adequate.
- According to WKE's 20-year outage schedule, WKE is planning on extending turbine-generator overhauls to 8 and 9 years. Typically, turbine-generators are overhauled every 5 years, although, with careful monitoring, some utilities are extending these time periods.
- The boiler water treatment program at Reid/HMPL Station does not meet recommended EPRI guidelines.
- Damaged insulation on hot piping systems and equipment presents a burn hazard to personnel as well as thermal efficiency losses.
- There are numerous electrical hazards present and electrical code violations. These hazards range from minor to serious (See Section 1 and Appendix A). There is significant risk to both personnel and equipment.
- Damaged or missing electrical conduit with exposed conductors present a shock hazard to personnel.
- Unusable fire fighting equipment subjects personnel and equipment to injury and equipment destruction.

- While the short-term repair effort on HMPL Unit 1 boiler may be sufficient to return the unit to service after the August 2004 overheating event, it is recommended that the long term repairs be undertaken to ensure *continuing safe and reliable operation*.

Recommendations

Of the recommendations listed below, item numbers 1 – 33 are the same as last year. Some of these items have been completed. Items that have been completed are noted below. Items 34-35 are new recommendations.

1. A plant safety audit should be conducted immediately and signs posted until all repairs and cleanup are done. A “voluntary” OSHA inspection is recommended. OSHA would advise of any problems and provide time to institute corrections or repairs. No fines could be imposed due to this voluntary inspection unless corrections are not made.
2. Any modifications or additions to the electrical system shall be National Electrical Code (NEC) compliant.
3. A program of continuous preventative maintenance should be instituted at Reid/HMPL Station. The program should include prevention and/or timely repair of all flue gas, fuel, ash or steam leaks.
4. All major items of equipment listed above should be repaired, serviced and placed back into operation, or BREC should be guaranteed that they will be restored to original functionality before the end of the agreement.
5. A “Lockout/Tagout” program should be implemented or enforced if a program is already in place.
6. HMPL Unit 1, HMPL Unit 2, and the Reid unit should be restricted to burning no more than 20 percent pet coke to avoid long-term detrimental effects on the life of the units. This is based upon industry-wide experience to-date.
7. Based on site visits to other utilities having situations similar to BREC (plant operation by other companies), BREC should consider having BREC personnel located at Reid/HMPL Station.
8. A full deaerator (DA) inspection, including magnetic particle inspection of all welds should be performed every 5 years. HMPL Unit 1 DA and HMPL Unit 2 DA were inspected in 1999 and 2000, respectively. WKE should keep BREC informed of the inspection schedule for these deaerators.
9. The boiler water treatment program at Reid/HMPL Station should be audited for compliance with the recommended EPRI guidelines.
10. HMPL Units 1 and 2 precipitators should continue to be refurbished. Due to the age of the units and use of pet coke with characteristics outside of original design parameters, the precipitators may never be able to operate at their original collection efficiencies.

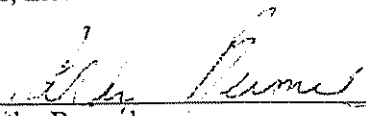
21. The structural steel on the barge unloader, coal conveyors, and Reid unit, HMPL Unit 1, and HMPL Unit 2 should be properly prepared, primed and painted as soon as possible.
22. Plant distribution electrical systems including conduit and cable trays need to be repaired or replaced. Lighting deficiencies should be repaired or replaced.
23. Junction boxes and panels need to be cleaned out and the covers replaced and secured.
24. There are numerous and various types of third-party inspection reports regarding different plant systems. These reports have numerous recommendations. WKE should provide information to BREC as to whether these recommendations have been implemented.
25. *Completed.*
26. WKE should implement a program of regular inspection and replacement of dessicant in vent dryers on the sulfuric acid tanks to ensure the situation does not result in excessive corrosion or hydrogen generation and potential explosion hazards.
27. The reagent preparation area is not being operated or maintained properly. WKE should institute a regular preventative maintenance program in this area of the plant.
28. WKE should perform operational valve tests on the Reid unit and HMPL Units 1 and 2.
29. *Completed.*
30. WKE should already have plans in place to chemically clean the HMPL units as soon as possible.
31. The Reid unit and HMPL Units 1 and 2 flues are in poor condition. Ductwork should be replaced including insulation and lagging.
32. *Completed.*
33. There should be a salaried WKE representative at the plant site 24 hours per day, 7 days per week.
34. BREC should monitor boiler repair efforts on HMPL Unit 1 during the fall 2005 outage.
35. BREC should observe WKE's NO_x compliance plan for at least one more season before deciding upon its overall adequacy.

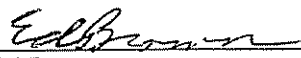
Section 1 – Summary of Site Visit Observations and Third-Party Report Issues

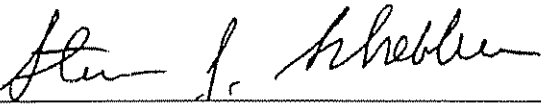
Major, safety, and legal issues from various reports provided by BREC are summarized into the appropriate categories and systems. The categories are broken down into the following groups: Mechanical/Civil, General, Processes, Electrical, Instruments & Controls, Structural, Operation, and Environmental, Health, and Safety (EHS).

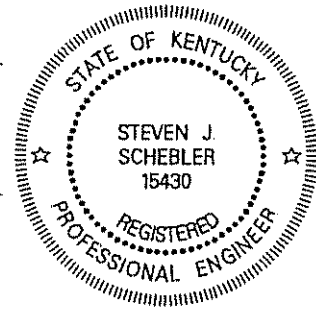
Appendix I – WKE Newsletters – This appendix contains copies of the WKE newsletters provided by BREC.

Respectfully submitted,
Stanley Consultants, Inc.

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Station Two

Annual Condition Assessment Report

Big Rivers Electric Corporation
Henderson, Kentucky

Final
December 31, 2005

CONFIDENTIAL

This document is confidential in accordance with the terms of Stanley Consultant's agreement with Big Rivers Electric Corporation dated April 14, 2000.



Stanley Consultants INC

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Engineering, Environmental and Construction Services - Worldwide

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Executive Summary

This Executive Summary presents a brief description of the detailed information contained in this report, conclusions drawn from that information, and recommendations to Big Rivers Electric Corporation (BREC). These descriptions follow the same format as the report.

General

BREC commissioned Stanley Consultants, of Muscatine, Iowa, to observe and comment on Western Kentucky Energy's (WKE) operation and maintenance of the Robert A. Reid unit and the two Henderson Municipal Power & Light units compared to a condition minimally consistent with operation in accordance with Prudent Utility Practice ("Acceptable Condition") as defined in Exhibit X to the Participation Agreement and how WKE's operation and maintenance is reflected in year-to-year changes in the condition of these units. The specific items addressed in this report include the power plant, site, and all associated facilities. The Robert A. Reid/HMPL Station Two (Reid/HMPL) is presently being operated and maintained by WKE, a subsidiary of LG&E Energy Corporation (LEC), under terms of a 25-year agreement. WKE began operation of the plant on July 17, 1998.

Purpose

BREC wishes to assure to the extent possible that at the expiration of the 25-year agreement, the Reid/HMPL Station will be returned in Acceptable Condition, allowing for normal wear and tear. It should be noted that the condition of the Reid/HMPL Station at the time WKE assumed operation in mid-1998 is unknown to Stanley Consultants' personnel.

System No. 12 Unit Drains and Sumps
System No. 14 Potable Water
System No. 15 Fire Water
System No. 16 Makeup Water Pretreatment
System No. 17 Demineralizers
System No. 18 Circulating Cooling Water
System No. 19 Service Water
System No. 20 Closed Cooling Water

System No. 21 Wastewater Pretreatment
System No. 22 Condensate System
System No. 23 Condensate Polishing
System No. 24 Auxiliary Steam
System No. 25 Feedwater
System No. 26 Boiler Water Sampling
System No. 27 Boiler Chemical Feed
System No. 28 Air Extraction (Condenser)
System No. 29 Coal Handling
System No. 30 Ignition Oil

System No. 31 Steam Generator
System No. 32 Combustion Air
System No. 33 Fuel Burning Equipment
System No. 38 Precipitators
System No. 39 Lube Oil Purification
System No. 40 Turbine-Generator

System No. 41 Lube Oil
System No. 43 Electro-Hydraulic Control (EHC)
System No. 45 Turbine Steam Seals
System No. 47 Carbon Dioxide and Hydrogen (CO₂ and H₂)
System No. 48 Seal Oil

System No. 52 Main Power
System No. 53 Bottom Ash/Fly Ash Handling
System No. 54 Heater Vents and Drains, Extraction
System No. 55 Main and Reheat Steam
System No. 56 Flue Gas Desulfurization (FGD)
System No. 59.1 Site Drainage
System No. 59.3 Sewage Treatment

System No. 60 Secondary Sludge (FGD) Dewatering
System No. 61 Selective Catalytic Reduction (SCR)
System No. 62 Coal Re-burn
System No. 63 Advanced Overfire Air (AOFA)

Annual Site Inspections – Year 2005

Stanley Consultants conducted an inspection of the Reid/HMPL Station to visually review plant conditions on May 6, 2005. Observations were performed by Ray Walters, Cathy Bernel, Ed Brown, Wayne Hanno, Henry Warner, Kip Funk, and Nancy Shell.

Summary of Observations

Significant portions of the Reid/HMPL Station and plant site were found to be in serious disrepair. Significant changes have been made to some equipment and operations. Kentucky OSIIA regulations require that all changes or modifications to plant systems (including disabling of equipment) are to be documented. This documentation includes both drawing revisions and revisions to the operating procedures. Maintenance manuals will also require revision to reflect the changes or modifications. Below are observations from Stanley Consultants' review:

- Current staffing by WKE is 22 percent less than when BREC operated this plant (214 personnel versus 274 personnel). Staffing has increased slightly from 212 personnel in 2004 to 214 personnel in 2005. It should be noted that the staffing discussed in this report refers to the total number of employees at the Reid/Green/HMPL site. These employees operate and maintain the Reid unit, the Reid combustion turbine (CT), the two HMPL units, and the two Green units. A separate report has been prepared for the Green units.
- The "site complexity" of the Reid/HMPL Station is considered high compared to other stations surveyed.
- Reid/HMPL Station's "operator to maintenance" employee ratio for the 2005 year is 1.18. This ratio is up from 1.17 last year. Wilson Station and Comparison Plants No. 1 and 3 have lower ratios. Coleman Station and Comparison Plant No. 5 have higher ratios.
- Reid/HMPL Station's "salaried to hourly" employee ratio for the 2005 year is 0.27. This ratio is the same as last year. Comparison Plants No. 1 and 3 had lower ratios. Comparison Plant No. 5, Wilson Station, and Coleman Station's ratios are higher.
- Reid/HMPL Station's "employee per megawatt (MW)" ratio for the 2005 year is 0.24. This ratio is the same as last year. Comparison Plants No. 1, 3, Wilson Station, and Coleman Station have lower ratios. It is important to note that this ratio is particularly sensitive to "site complexity."
- There are significant differences in staffing practices at the Reid/HMPL Station as compared to other stations operated by WKE.
- WKE relies upon outside contract labor for maintenance repairs at the Reid/HMPL Station.

- Gross Output Factors (GOFs) for both HMPL units have traditionally been above the annual GADs averages.
- Gross Capacity Factors (GCFs):
 - Reid unit GCFs had been above the annual GADs averages from 2001 through 2003.
 - HMPL Units 1 and 2 Gross Capacity Factors (GCFs) have traditionally been above the annual GADs averages until 2003.
- Force Outage Rates (FORs) and Equivalent Forced Outage Rates (EFORs):
 - Reid unit FORs and EFORs had been trending up from 2000 through 2003 but decreased in 2004 possibly due to reduced utilization of the unit. Reid unit FORs and EFORs had been above the annual GADs averages since 2001 until it improved in 2004.
 - HMPL Units 1 and 2 Forced Outage Rates (FORs) and Equivalent Forced Outage Rates (EFORs) had been trending up since 2000. HMPL Units 1 and 2 FORs and EFORs had been well above the annual GADs averages from 2001 through 2004. Superheater problems were mainly responsible for these trends. HMPL Unit 1 superheater was replaced in spring 2003 and HMPL Unit 2 superheater was replaced in spring 2004. The HMPL Units 1 and 2 FORs and EFORs have improved to below annual GADs averages.
- Unit Starts:
 - WKE is utilizing the Reid unit more than pre-1998 operation. The Reid unit experienced the following number of unit starts:
 - 28 unit starts in 1998
 - 16 unit starts in 1999.
 - 14 unit starts in 2000.
 - 18 unit starts in 2001
 - 17 unit starts in 2002.
 - 21 unit starts in 2003.
 - 21 unit starts in 2004.
 - 20 unit starts in 2005.

manufacturer (OEM) recommends a complete inspection on the basis of operational hours which translates to approximately every 5 years. Typically turbine-generators in large electric generating stations are overhauled every 5 years although, with careful monitoring, some select utilities attempted to extend these operational time periods. These utilities determined through experience that the overhauls which occurred after extended run times (longer than the OEM recommendation) did result in higher costs.

- A photographic comparison was made between the Reid/HMPL Station and three similar facilities: Plant No. 1, Plant No. 3, and Plant No. 5. Refer to Appendix D.
- Various documents provided by BREC, such as the 1998 Depreciation Study, boiler inspection reports, turbine inspection reports, and tube and deposit test reports, were reviewed, summarized, and included in appendices to this report, along with the annual inspection results.
- Of the WKE budgeted capital dollars in which BREC provides a share, the following percentages were applied toward the Reid/HMPL units upkeep. The balance, if any, of the capital dollars were allocated to performance/efficiency projects. In accordance with the BREC/LG&E Lease and Operating Agreement this cost should not be shared by BREC:
 - 100 percent in 1999.
 - 92 percent in 2000.
 - 69 percent in 2001.
 - 84 percent in 2002.
 - 83 percent in 2003.
 - 97 percent in 2004.
- BREC reported that the Reid/HMPL Station maintenance man-hours expended per year averaged over 95,000 per year prior to 1998. Based upon their reduced maintenance man-hours and the plant staffing levels WKE relies upon outside contractors to perform maintenance work and does not track the contractor maintenance man-hours. Refer to Appendix B. Since WKE does not track contractor maintenance man-hours, there is insufficient data upon which to draw any definitive conclusions or comparisons.
- The boilers and associated enclosures were cleaner this inspection than during previous walk-throughs. However, there was still considerable ash, coal dust and trash on top of boiler backpasses, secondary, and primary air ducts, as well as on top of Forced Draft (FD) fans. In the enclosures, the coal dust could present a fire hazard. When wet, the coal and ash dust will accelerate corrosion.
- There were significant boiler gas leaks under the lagging on the north side, as well as the top, of Reid unit. HMPL Unit 1 wind box was corroded with numerous gas leaks. There

- Some major electrical motors, the Forced Draft fans and coal mills, have an accumulation of dirt and debris on the ventilation air holes, which results in a lack of cooling airflow and places these motors in danger of damage from overheating.
- Based upon reports received from WKE, a continuous and consistent program of sampling boiler, economizer, superheater, and reheater tubes cannot be verified.
- NO_x system:
 - A Selective Catalytic Reduction (SCR) system for NO_x was retrofitted to the HMPL units in 2003 and 2004. The HMPL Unit 1 SCR tie-in was performed during the fall 2003 outage. The HMPL Unit 2 SCR tie-in was performed during the spring 2004 outage. Summer 2004 was the first season in service.
 - The Reid unit was originally built with eight coal burners. Four of these burners were replaced with natural gas burners in 2000 as part of WKE's NO_x and SO₂ reduction strategies. Reid unit burner controls were updated to better accommodate this in 2001. These burners and the gas line supplying Reid unit have not been used. The Reid unit has demonstrated that it can achieve full load with only four coal burners and the associated coal mill modifications that were also done.
 - The Reid Combustion Turbine (CT) and controls were modified to burn either fuel oil or natural gas in 2000 as part of WKE's NO_x and SO₂ reduction strategies. Actual testing of these modifications began in 2002. The test results are not available to Stanley Consultants.
- Corrosion Rate Data:
 - HMPL Station provided mild steel corrosion rate data from October 1998 through January 2003 for the open re-circulating cooling water system. WKE has not provided data since January 2003. A general quantitative classification of a corrosion rate which indicates a good condition within an open re-circulating cooling water system for mild steel is 3.0 mils per year (mpy). None of the eighteen total measurements taken at HMPL Station were below 3.0 mils per year.
 - HMPL Station provided 90 Copper (Cu)/10 Nickel (Ni) corrosion rate data from October 1998 through January 2003 for the open re-circulating cooling water system. WKE has not provided data since January 2003. A general quantitative classification of a corrosion rate which indicates a good condition within an open re-circulating cooling water system for 90 Cu/10 Ni alloys is 0.2 mils per year (mpy). Three of the eighteen total measurements taken at HMPL Station were below 0.2 mils per year. Refer to Figure C-1.
 - HMPL Station mild steel corrosion rate data was provided from February 1999 through January 2003 for the closed cooling water system. WKE has not

outside of recommended EPRI guidelines 65 percent of the time. Dissolved oxygen (DO₂) levels sampled at the condensate pump discharge were not reported. EPRI recommended sampling points and frequency do not appear to be followed.

- The Reid unit was last chemically cleaned in June 2004. HMPL Units 1 and 2 were last chemically cleaned in 1998 and 1997, respectively.
- A fuel blending system was added to the coal handling system in 2000. Numerous conveyor and transfer point modifications have also been made to facilitate burning numerous and different fuel types, some of which were not incorporated into the design of the units.
- There were numerous locations at various elevations on HMPL Units 1 and 2 where buckstay boiler "clips" may have broken or loosened. This should be verified and repaired by removing the insulation and lagging.
- WKE verbally notified BREC that a high percentage of petroleum coke (pet coke) has been fired regularly in the Reid unit and HMPL units. Fuel quality is regularly worse than unit design parameters.
- BREC has reported that WKE has on numerous occasions since 1998 used dynamite in the Reid unit and HMPL units for slag control and removal. This is not a prudent utility practice. An EPRI CS-4840 March 1987 Paper entitled "State-of-the-Art Maintenance and Repair Technology for Fossil Boilers and Related Auxiliaries," notes this method of removal is one of last resort. BREC and the City of Henderson have jointly submitted a letter to WKE in which they have expressed concern regarding the degree of this practice at the Reid and HMPL units.
- BREC reported that EPA has reduced the Reid/HMPL Station Clean Air Act (CAA) SO₂ emissions allowance limit due to the result of fuel switching to burning a higher percentage of pet coke.
- There are numerous scrubber process parameters that directly impact the required upkeep of the FGD/IU Conversion Systems, Incorporated (FGD/IU) systems at the HMPL Station. The percent sulfur in the fuel impacts the tons of material being processed in the scrubber and at the IU building. The percent module solids and percent filter cake solids impact the tons of material processed at IU building. The module pH and dissolved chloride content impacts corrosion of system equipment. The percent of oxidation rate in the modules impacts the scale deposit accumulation of the system and equipment. All of the above mentioned scrubber process parameters ultimately impact production and BREC's contribution to capital costs.
- Infrared inspection reports indicated some significant electrical problems in the medium-voltage power, 480-volt power, and main power systems at HMPL Station exist.

- The side stream sand filters for the HMPL cooling towers were not in service. This condition is the same as last year's walk-through
- Numerous issues indicating signs of deterioration and the need for monitoring for possible replacement were noted in the third party reports for HMPL Units 1 and 2 cooling towers. It is unknown if any of the items noted during these inspections have been repaired.

Conclusions

The Reid/HMPL Station is not being operated and/or maintained in an Acceptable Condition. The expected life of the equipment and systems installed at the plant are being compromised. The following conclusions result from Stanley Consultants' review:

- The overall condition of the Reid/HMPL Station is poor in comparison to other coal-fired power plants that were visited in previous years for comparison (Comparison Plants No. 1, 3, and 5).
- The Reid/HMPL Station is not in an Acceptable Condition when compared to the other BREC units observed by Stanley Consultants; however, the Reid/HMPL Station does rank above the Wilson Station and Green Station. The stations have been ranked in the following order from best to worst: 1) Coleman; 2) Reid/HMPL; 3) Green; 4) Wilson.
- There is a lack of general housekeeping. For example, missing light bulbs, fly ash, coal dust, etc.
- No personnel were found outside the Control Room monitoring equipment or systems during the Stanley Consultants' walk-through, with the exception of the Slaker Buildings.
- Plugged motor vents and cooling vanes will result in the reduction of life of the respective motor. The general build up of ash and coal dust present fire hazards and contribute to component corrosion.
- Reid/HMPL unit's deteriorated heat rates are likely due to poor fuel quality, deterioration of equipment and/or lack of calibration of instrumentation and could be affected by the length of time between turbine-generator overhauls.
- The Reid unit and HMPL Units 1 and 2 EAFs, GCFs, and GOFs have increased during the WKE operations of the units. These increases are the result of fewer and shorter planned outages since 1998.
- The Reid unit yearly generation values indicate that WKE is utilizing this unit more than prior to 1998.
- The increases in the HMPL Units 1 and 2 FORs and EFORs are attributed to fuel related opacity derates, turbine-generator controls change out, and superheater tube failures.

- The structural steel on the barge unloader, coal conveyors, the Reid Unit and HMPL Units 1 and 2 need painting. *Unprotected steel will deteriorate at an increased rate resulting in eventual weakening of the structure, mechanical damage, and failure of supports.*
- Typically, boilers are chemically cleaned at 5-year intervals. HMPL Unit 1 has not been chemically cleaned in 7 years. HMPL Unit 2 has not been chemically cleaned in 8 years. It is expected that HMPL Units 1 and 2 require cleaning at this time.
- A number of additions and modifications have been made at the Reid/HMPL Station to accommodate a much broader range of fuels. These additions and modifications include for example, the fuel blending system, truck hoppers, conveyors, and transfer points. The farther these fuels range from unit design parameters the more the fuel will impact maintenance and operations of the units.
- The use of petroleum coke has the potential for increased air heater cold-end corrosion, erosion of fuel handling and grinding equipment, problematic boiler slag formation, risk of furnace flameout and explosion, waterwall tube wastage, and other problems.
- BREC reported that WKE has on numerous occasions since 1998 used dynamite in the HMPL Units for slag control and removal. The use of dynamite for repeated boiler slag control is a method of last resort. Other methods that would be considered acceptable operating practices are controlling the fuel quality, adequate sootblowing, and/or shedding load.
- BREC reported that the FGD/IDU systems are currently operating above design conditions as compared to the years of operation prior to 1998, processing and removing more tons of SO₂, reagent and sludge, which will result in additional maintenance effort.
- The reagent preparation area is not being operated or maintained adequately.
- Third-party inspection reports stated in March 2001 that HMPL Unit 1 precipitator is in need of a preventative maintenance program so the unit can provide service for a number of years without any major repairs required. Some repairs were indicated in a 2003 report for HMPL Unit 1. Third-party inspection reports stated in November 2001 and October 2000, that HMPL Unit 2 precipitator is in need of a preventative maintenance program so the unit can provide service for a number of years without any major repairs required. Some repairs were indicated in a 2003 report for HMPL Unit 2. Due to the age of these units and the use of pet coke with characteristics outside of original design parameters, the precipitators may never be able to operate at their original collection efficiencies. Refurbishment of HMPL Units 1 and 2 should be continued.
- The fly ash and cinders that are built up on the beam stiffeners on the boilers, in combination with moisture from the cooling towers and precipitation, will promote corrosion on the beam stiffeners. There are weep/drain holes in the beams but these will not work unless the beam stiffeners are cleaned out.

- 10 HMPL Units 1 and 2 precipitators should continue to be refurbished. Due to the age of the units and use of pet coke with characteristics outside of original design parameters, the precipitators may never be able to operate at their original collection efficiencies.
11. WKE should provide BREC with a specific schedule for inspection of High Energy (HE) piping, seamed or not. All external attachments to main steam piping should be checked. This inspection should be performed every 5 years. WKE should also provide BREC a specific schedule when HE piping (Boiler Feed Pump (BFP) discharge forward), seamed or not, is to be inspected by Non-Destructive Examination (NDE). This was a recommendation from the 1998 Depreciation Study, although limited inspections of the HMPL Unit 1 hot reheat line and IIMPL Unit 2 cold and hot reheat systems have occurred since that time, an overall plan and schedule for implementing the plan has not been provided.
12. Main steam, cold reheat, and hot reheat pipe hanger inspections were performed at IIMPL Units 1 and 2 in April 2003 and August 2004. A main steam pipe hanger inspection (cold) was performed at Reid unit in April 2003, but hangers need to be reviewed in the hot condition to properly assess. A comprehensive report was submitted to WKE and BREC noting the hanger and support conditions including rusted cans, disconnections, mis-positioned, and over- or under-loaded units. It is unknown if the recommendations from these reports have been performed. A program of adjustment, repair, and replacement should be implemented.
13. A program of continuous and consistent housekeeping should be implemented by WKE.
14. There are numerous safety and electrical hazards present and electrical code violations. These hazards range from minor to serious. There are significant risks to both personnel and equipment. Safety and electrical hazards and code violations should be addressed immediately.
15. An instrument calibration and preventative maintenance program should be instituted at Reid/HMPL Station.
16. Piping and ductwork insulation and lagging should be repaired or replaced.
17. WKE should perform, at a minimum, annual full load (capacity) tests on the Reid unit, HMPL Unit 1, and HMPL Unit 2 as described in the LEC Agreements under "System Capacities." Verification that these tests have been performed should be tracked by WKE and results should be provided to BREC.
18. WKE should initiate a program of boiler and turbine-generator inspections performed by the Original Equipment Manufacturer (OEM). The inspections should be scheduled such that each type of boiler and turbine-generator is reviewed every 5 years.
19. WKE should institute a regular maintenance program on switchgear, bus work, motor control centers, and connections. This program should include infrared thermal imaging surveys be completed on an annual basis to identify problem areas.

- 37 An annual review of the recorded boiler operating temperatures and pressures, as compared to design parameters, should be performed.
38. Stanley Consultants recommends that the coal bunkers should have their integrity inspected at the circumferential welds. These welds had a catastrophic failure at another utility with the same design in 2001

Section 1 – Summary of Site Visit Observations and Third-Party Report Issues

Major, safety, and legal issues from various reports provided by WKF to BREC for Stanley Consultants review and analysis are summarized into the appropriate categories and systems. The categories are divided into the following groups: Mechanical/Civil, General, Processes, Electrical, Instruments & Controls, Structural, Operation, and Environmental, Health, and Safety (EHS).

Section 2 – Major Projects by WKE

Section 2 presents a summary of major work items at Reid/HMPL Station, which were completed during the period 1998 through September 30, 2005. This information was provided by WKE to BREC to Stanley Consultants for review and analysis. BREC has confirmed that the listed work was completed.

Section 3 – Comparison with Similar Units

Section 3 compares the current condition of the Reid/HMPL Station to that of three facilities of similar age and capacity. Photos of the generating stations are shown in Appendix D – Plant Pictures. Also presented and discussed in Section 3 is the North American Reliability Council Generating and Availability Data (GAD) data for the Reid/HMPL Station and a discussion relative to the comparison of GAD data for similar sized generating units in the range of 100 to 199 MW and in the range 1 to 99 MW.

Appendices

Appendix A – Detailed Site Visit Observations – Includes a listing of all on-site observations by Stanley Consultants

Appendix B – Staffing Charts and Safety Data – Includes information on staffing from comparison units, staffing during BREC's and WKE's periods of operation of the Reid/HMPL Station, and safety related information such as lost time injuries, KOSHA recordable injuries and incident rates

Appendix C – Open or Pending items from Equipment Inspection Reports – Summarized in this Appendix are open or pending items from equipment inspection reports and major outage work order items

Appendix D – Plant Pictures – This appendix documents recent photographs of various pieces of equipment and site conditions at BREC's Reid/HMPL Station and the other three facilities that were visited

October 22, 2008

**PSC INFORMAL CONFERENCE
OCTOBER 20, 2008**

Response to PSC Questions for Henderson

The projected \$92 million expense for future repairs and replacements at Henderson Station Two was itemized by project in Exhibit C at pages C-1 through C-16 of Henderson's February 27, 2008, proposed Draft Station Two Unwind Termination and Release Agreement. A proposed final Draft Henderson Agreement was sent to E.ON and Big Rivers on May 1, 2008. Exhibit C included information Big Rivers submitted to the PSC, information Big Rivers submitted to Henderson, information Exothermic Engineering submitted to Henderson, and three additional projects submitted by Henderson.

All projects listed in Exhibit C would be scheduled over several budget periods in the future and, as provided in the existing Station Two Contracts, Henderson fully intends to pay its share of the expenses based upon its annual capacity reservation from Station Two. Henderson has already taken the initial steps to finance the future repairs and replacements listed in Exhibit C. Henderson is currently in the process of issuing \$12.5 million in revenue bonds and plans to issue additional bonds in the future to finance the City's share of the expense for the projects. A copy of Exhibit C of Henderson's proposed Draft Station Two Unwind Termination and Release Agreement is attached. Exhibit C provides explanations concerning the source information for the individual projects.

The \$13.5 million Henderson Unwind claim is separate and not within the \$92 million expense identified for future repairs and replacements at Henderson's Station Two. This \$13.5 million claim is related to Station Two maintenance expense items, unit heat rate degradation, pet coke damage, and Henderson financial risk.

EXHIBIT C

STATION TWO WORK PLAN

A. O&M and Capital Project Lists Submitted by Mark A. Bailey on behalf of Big Rivers on February 14, 2008 (PCS Case No. 2007-00-455)

		<u>GROSS CAPITAL BUDGET</u>
I.	2008 Capital Budget – Page C-4 Attached	\$ 4,095,684
II.	2009 Capital Budget – Page C-5 Attached	5,653,192
III.	2010 Capital Budget – Page C-6 Attached	3,783,080
IV.	2008 O&M Non-Labor Budget – Pages C-7 through C-10 Attached	10,573,064
V.	2009 O&M Non-Labor Budget – Pages C-11 through C-13 Attached	10,944,055
VI.	2010 O&M Non-Labor Budget – Pages C-14 through C-16 Attached	11,768,042

B. Additional O&M and Capital Projects

		<u>PROJECT TO BE COMPLETED IN BUDGET YEAR</u>			<u>TOTAL PROJECTED COST</u>
VII	H1 Precipitator Repairs*	2009			\$ 3,224,074
VIII	H2 Precipitator Repairs*		2010		3,224,074
IX.	H1 Repair Dry Side Ductwork*	2009			297,222
X	H2 Repair Dry Side Ductwork*		2010		297,222
XI	H1 Structural & Life Assessments*	2009	2010	2011	1,192,362
XII.	H2 Structural & Live Assessments*	2009	2010	2011	1,192,362
XIII	H1 Booster Fan*	2009			104,901
XIV.	H2 Booster Fan*		2010		104,901
XV.	H1 Clean Coal Dusts & Flyash*	2009	2010		346,045
XVI.	H2 Clean Coal Dust & Flyash*	2009	2010		346,045
XVII.	H1 Boiler Structural Painting**		2010		3,000,000
XVIII.	H2 Boiler Structural Painting**			2011	3,000,000
XIX.	H1 SCI Baseline Repairs*	2009	2010	2011	1,192,362
XX.	H2 SCI Baseline Repairs*	2009	2010	2011	1,192,362

C. Repair Lists by Exothermic Engineering Co., LLC for the City Utility Commission (To Be Included Following Receipt)

		PROJECT TO BE COMPLETED IN BUDGET YEAR			TOTAL PROJECTED COST
XXI.	H1 and H2 Exothermic Engineering Repair List	2009	2010	2011	\$17,134,000
XXII.	H1 Exothermic Engineering Dry Fire Fire Assessment Repair		2010	2011	3,484,344

D. Ash Pond

XXIII	Dredging Station Two Ash Pond**	2009	2010		5,424,000
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* As described in the Big Rivers Electric Corporation Draft Work Plan Reid/HMP&L Stations, dated February 11, 2007.

** Cost for Project estimated by the City Utility Commission.

**EXOTHERMIC ENGINEERING VISUAL CONDITION
ASSESSMENT REPAIRS COST ESTIMATE**

AMI Visual Assessment Category Estimates

H1 Boiler Area	\$ 2,722,000
H2 Boiler Area	\$ 2,007,000
H1 Boiler Building Internal	\$ 236,000
H2 Boiler Building Internal	\$ 277,000
H1 Ash System	\$ 19,000
H2 Ash System	\$ 18,000
Ash System Common	\$ 216,000
North Cooling Tower	See Below
South Cooling Tower	See Below
Cooling Water Intake	\$ 61,000
FGD and SCR Systems	\$ 532,000
Coal Handling System	\$ 4,678,000
Water Plant	\$ 99,000
Construction Overhead and Equipment	\$ 953,000
Total AMI Visual Assessment Repair Estimate	\$ 11,818,000

Exothermic Engineering Visual Condition Additional Estimates

Switchgear Repair	\$ 80,000
H1 Cooling Tower Switchgear Replace	\$ 400,000
H2 Cooling Tower Switchgear Replace	\$ 400,000
Coal Yard Switchgear Replace	\$ 250,000
Motor Repair	\$ 282,000
H1 High Energy Piping Hanger Replace	\$ 527,000
H2 High Energy Piping Hanger Replace	\$ 527,000
H1 Cooling Tower Repairs	\$ 1,095,000
H2 Cooling Tower Repairs	\$ 1,095,000
Site Project Engineer	\$ 660,000
Total Exothermic Engineering Additional Estimate	\$ 5,316,000

Exothermic Engineering Visual Assessment Total Repair Cost **\$ 17,134,000**

Big Rivers Electric Cooperative 2008 Capital Budget

Project Description	Gross Capital Budget	City of Henderson Share	Net Capital Budget
Reid / HMPL Station II			
RGH - 3-Ton Electric Hoist	5,000	572	4,428
RGH - Misc Safety Equipment	20,000	2,286	17,714
RGH - CSI Vibration Equipment	45,000	5,144	39,856
RGH - #2 Screen Wash Pump - Green pays 10%	11,000	1,258	9,742
RH - Misc Capital Projects	100,000	25,199	74,801
RH - Misc Tools & Equipment	10,000	2,520	7,480
RH - 1 Hr Self Contained Breathing Apparatus(SCBA) (2)	7,000	1,764	5,236
RH - Client & Monitors	16,000	4,032	11,968
RH - Bobcat Loader (Operations)	37,000	9,324	27,676
RH - Portable Gas Analyzers (2) - Moved \$15K from 2007 for 3	12,000	3,024	8,976
RH - 4" Slurry Pump (Trash) - Moved from 2007	15,450	3,893	11,557
H1 - "A" Station Air Compressor (2 of 2) - added \$25K	225,000	72,115	152,885
RH - Upgrade 2-way Radios-Cell Phones	5,000	1,260	3,740
RH - Misc Capital Valves	90,000	22,679	67,321
RH - Misc Conveyor Belts (2B & #1)	90,000	22,679	67,321
H0 - CCS Engineering	44,000	0	44,000
H0 - DCS Engineering	83,000	26,603	56,397
H1 - WDPF FGD & SCR Controls	10,000	3,205	6,795
H1 - CCS Controls	60,000	38,462	21,538
H2 - CCS Controls	620,000	226,823	393,077
H2 - CCS Field Devices	750,000	240,385	509,615
H2 - Control Room	100,000	32,051	67,949
H0 - Aux Water Strainers	110,000	35,256	74,744
H0 - Engineering for Wetbottom Drains	50,000	16,026	33,974
H0 - Install GPS Clock on DCS/PI Systems	5,000	1,603	3,397
H0 - Rpl Hydrazine Day Tanks	8,000	2,564	5,436
H0 - Rpl Cooling Tower Fan Gear Box	113,300	36,314	76,986
H0 - Spare Precip Transformer	80,000	25,641	54,359
H1 - Rpl 4th Floor Roof	0	0	0
H2 - Air Preheater Baskets (Cold End)	875,000	280,449	594,551
H2 - Cooling Tower Distribution Deck	200,000	64,103	135,897
H2 - Drum Safety	12,000	3,846	8,154
H2 - Feedwater Regulator Rexa Drive	25,000	8,013	16,987
H2 - High Energy Pipe Hangers	30,000	9,615	20,385
H2 - Hydrogen Purity Meter	22,000	7,051	14,949
H2 - Install Sootblower Power Disconnects	16,000	5,128	10,872
H2 - Penthouse Isomembrane Installation	175,000	56,090	118,910
H2 - Rpl AH Steam Coils (2)	12,000	3,846	8,154
H2 - Rpl Slag Grinders (2)	70,000	22,436	47,564
H2 - Rpl Sootblowers (11-13 of 23) 3 total	65,000	20,833	44,167
H2 - Rpl Wall Blowers (1-3 of 24) 3 total	40,000	12,821	27,179
R1 - CO2 Monitor	13,000	0	13,000
R1 - Flow Monitor	22,000	0	22,000
R1 - NOX Monitor	14,000	0	14,000
R1 - SO2 Monitor	12,500	0	12,500
R1 - Rpl AH Steam Coils (2)	12,000	0	12,000
RH - High Pressure Transmitter Tester (2)	10,000	2,520	7,480
RH - Rpl #1 & #2 Carbon Filters	40,000	10,080	29,920
H0 - Rpl Layer of Catalyst	1,550,000	471,955	1,078,045
Total Reid / HMPL Station II	\$ 5,937,250	\$ 1,841,566	\$ 4,095,684

Big Rivers Electric Cooperative 2009 Capital Budget

Project Description	Gross Capital Budget	City of Henderson Share	Net Capital Budget
<u>Reid / HMPL Station II</u>			
RH - Misc Capital Projects	100,000	25,199	74,801
RH - Misc Tools & Equipment	10,000	2,520	7,480
RH - Electric Wrench	5,000	1,260	3,740
RH - Passport Multi Gas	7,000	1,764	5,236
RH - Passport Ammonia	6,000	1,512	4,488
RH - Remodel Operations Locker Room	35,000	8,820	26,180
RH - Client & Monitors	20,000	5,040	14,960
RH - 4" Sump Pump and Hose - Moved from 2008	25,750	6,489	19,261
RH - Misc Capital Valves	90,000	22,679	67,321
RH - Misc Conveyor Belts	90,000	22,679	67,321
H0 - DCS Engineering	166,000	53,205	112,795
H1 - Rpl WDPF FGD & SCR Controls	140,000	44,872	95,128
H1 - CCS Controls	580,000	185,897	394,103
H1 - Control Room	100,000	32,051	67,949
H0 - Upgrade CEMs	80,000	25,641	54,359
R1 - Upgrade CEMs	55,000	13,859	41,141
H2 - Rpl WDPF FGD & SCR Controls	60,000	19,231	40,769
H0 - Rpl Bleed Lines 8" (2)	400,000	128,205	271,795
H0 - Rpl Elevator Doors/Frames	100,000	32,051	67,949
H0 - Rpl Thickener Return Line 16"	200,000	64,103	135,897
H0 - Wetbottom Drains	300,000	96,154	203,846
H1 - AH Inlet Expansion Joints (2)	160,000	51,282	108,718
H1 - Burner Deck Vent Fans	30,000	9,615	20,385
H1 - Cooling Tower Distribution Deck	200,000	64,103	135,897
H1 - FD Fan Outlet Damper A&B Rexa Drives	20,000	6,410	13,590
H1 - High Energy Pipe Hangers	35,000	11,218	23,782
H1 - Hydrogen Purity Meters	22,000	7,051	14,949
H1 - Install Sootblower Power Disconnects	16,000	5,128	10,872
H1 - Rpl AH Steam Colls (2)	12,000	3,846	8,154
H1 - Rpl Mist Eliminator	175,000	56,090	118,910
H1 - Rpl Precip Hoppers (9-12)	250,000	80,128	169,872
H1 - Rpl Slag Grinders (2)	75,000	24,038	50,962
H1 - Rpl Sootblowers (20-23 of 23) 4 total	112,000	35,897	76,103
H1 - Rpl Wallblowers (8-10 of 24) 3 total	40,000	12,821	27,179
H2 - #5 HP Heater Re-tube	300,000	96,154	203,846
R1 - Rpl Reclaim Vent Fan	30,000	0	30,000
R1 - Stack Lighting	200,000	0	200,000
RH - Booth System Control Box	22,000	5,544	16,456
RH - Loop Calibrators (2)	4,000	1,008	2,992
RH - Plant Phone & PA New System	650,000	163,793	486,207
H0 - Rpl Layer of Catalyst	300,000	78,441	221,559
HMPL SCR Catalyst Replacement-additional \$ (net)	610,731		610,731
HMPL Stack Lighting	200,000		200,000
R-CT reliability study & upgrades	1,125,509	0	1,125,509
Total Reid / HMPL Station II	\$ 7,158,990	\$ 1,505,798	\$ 5,653,192

Big Rivers Electric Cooperative 2010 Capital Budget

Project Description	Gross Capital Budget	City of Henderson Portion	Net Capital Budget
<u>Reid / HMPL Station</u>			
RGH - Misc Safety Equipment	20,000	2,407	17,593
RGH - Rpl Panama Bldg External Sheeting	40,000	4,453	35,547
RH - Misc Capital Projects	100,000	25,199	74,801
RH - Misc Tools & Equipment	10,000	2,520	7,480
RH - Electric Welding Machine	5,000	1,260	3,740
RH - Client & Monitors	20,000	5,040	14,960
RH - 1 Ton Mtc Truck (Rpl S9 - 1990 Ford)	20,000	5,040	14,960
RH - Misc Capital Valves	90,000	22,679	67,321
RH - Misc Conveyor Belts	90,000	22,679	67,321
H0 - DCS Engineering	99,600	31,923	67,677
H0 - PI Tags	25,000	8,013	16,987
H2 - Rpl WDFP FGD & SCR Controls	80,000	28,846	61,154
H1 - Performance OPT Software	150,000	48,077	101,923
H2 - Performance OPT Software	150,000	48,077	101,923
H0 - Rpl F1-F4 Building Heating Fans	200,000	64,103	135,897
H2 - #6 Heater Retube	300,000	96,154	203,846
H2 - AH Outlet Expansion Joint	85,000	27,244	57,756
H2 - Boiler to AH Breeching Expansion Joints (2)	130,000	41,667	88,333
H2 - Burner Igniter Conversion	150,000	48,077	101,923
H2 - High Energy Pipe Hangers	35,000	11,218	23,782
H2 - Rpl AH Steam Coils (2)	12,000	3,846	8,154
H2 - Rpl Mist Eliminator	175,000	56,090	118,910
H2 - Rpl Precip Hoppers on #9-#12	200,000	64,103	135,897
H2 - Rpl Precip Outlet Duct to Bypass Stack Breeching	300,000	96,154	203,846
H2 - Rpl Slag Grinders (2)	75,000	24,038	50,962
H2 - Rpl Sootblowers (14-17 of 23) 4 total	115,000	36,859	78,141
H2 - Rpl Wallblowers (4-6 of 24) 3 total	48,000	15,385	32,615
H2 - Feedwater Heater MOV Extraction Valves - Chg is 3%	160,000	51,282	108,718
H2 - Voltage Regulator	175,000	56,090	118,910
H2 - Waterwall Overlay	1,000,000	320,513	679,487
R1 - Rpl AH Steam Coils (2) - Moved from 2009	12,000	0	12,000
RH - "5A" Raw River Reclaim vent fans	26,000	6,300	19,700
RH - 480 Volt Welder	3,000	756	2,244
RH - Barge Unloader Bucket	70,000	17,639	52,361
RH - Rpl 480 Volt MCC	200,000	50,398	149,602
RH - Rpl River Intake 480 Volt MCC	100,000	25,199	74,801
RH - Temperature Bath Calibrator	8,000	2,016	5,984
HMPL SCR Catalyst Replacement	666,820	0	666,820
Total Reid / HMPL Station II	\$ 5,154,420	\$ 1,371,340	\$ 3,783,080

BREC - Reid/Station Two

2008 O&M Non-Labor Budget (Gross)

Number	Description	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	TOTAL
RDMAIR	RDM Air System	4,650	3,420	4,740	1,300	4,678	2,120	1,300	5,350	3,850	3,820	3,430	1,250	48,000
STMPAS	STM Air System	1,160	3,840	3,150	2,350	3,780	2,900	3,950	1,750	3,800	3,860	2,000	3,000	25,000
RDMASH	RDM Ash Handling	5,250	5,650	7,050	7,050	1,350	10,350	6,050	4,050	8,700	4,000	8,600	4,400	69,000
STMASH	STM Ash Handling	7,550	16,100	15,300	12,900	5,550	27,750	11,300	19,500	7,900	10,750	11,800	10,100	156,000
RDMBGR	RDM Boilers & Burners	10,300	13,000	9,150	6,500	3,100	3,300	4,700	3,600	2,850	12,300	12,000	9,200	90,000
STMBGR	STM Boilers & Burners	22,100	17,900	29,600	24,900	23,850	45,900	22,900	20,400	26,550	19,900	22,100	22,600	299,000
RDMFOS	RDM Fuel Oil System	900	600	300	1,300	500	400	200	100	550	600	700	400	7,000
STMFOS	STM Fuel Oil System	1,200	1,750	1,000	1,450	950	2,100	2,500	800	1,050	1,250	1,300	900	15,600
RDMCDS	RDM Condensate System	1,000	730	1,000	1,450	480	570	375	345	450	1,500	2,000	1,100	11,000
STMCDS	STM Condensate System	1,000	2,900	2,600	1,650	1,700	3,250	3,000	3,350	10,100	3,050	3,250	1,260	38,000
RDMDWS	RDM Demineralized Water System	1,400	2,100	1,000	1,000	1,300	800	300	900	300	1,300	1,300	800	12,500
RDMBFW	RDM Feedwater System	700	2,200	1,100	2,000	50	200	300	60	380	1,500	1,200	1,300	11,010
STMBFW	STM Feedwater System	5,000	5,500	10,700	6,700	5,000	5,800	4,200	5,700	7,800	6,200	7,400	5,000	74,000
RDMFDS	RDM Fans/Draft System	1,500	3,400	1,700	2,600	850	480	2,850	1,020	1,995	600	3,500	3,500	23,985
STMFDS	STM Fans/Draft System	2,500	5,650	5,600	5,200	5,300	10,900	5,300	4,200	9,750	6,400	4,800	3,300	68,000
RDMFPS	RDM Fire Protection	700	850	3,400	700	650	500	200	700	2,400	2,800	700	700	14,000
STMFPS	STM Fire Protection	1,550	1,050	3,750	1,550	1,550	1,550	1,750	1,550	1,550	1,050	3,550	1,050	24,500
RDMPLS	RDM Plant Lighting System	1,000	5,600	200	4,500	300	1,500	2,160	4,600	500	3,600	2,000	450	27,400
STMPLS	STM Plant Lighting System	9,300	2,800	3,100	5,700	5,700	3,100	6,600	6,800	3,300	6,200	6,100	3,500	62,200
RDMOHC	RDM Overhead Cranes & Hoists	3,000	1,300	2,300	2,400	0	3,000	2,500	1,000	2,500	0	2,000	0	20,000
STMOHC	STM Overhead Cranes & Hoists	800	1,500	2,600	2,000	0	1,000	1,800	1,450	2,100	1,600	2,100	1,000	16,500
RDMPCM	RDM Plant Communications	1,800	1,900	1,000	1,500	1,500	1,600	1,600	1,450	1,600	2,000	1,000	1,850	18,400
STMPCM	STM Plant Communications	2,900	1,650	1,500	1,500	1,550	1,700	1,800	1,600	2,100	1,900	1,600	1,300	20,000
RDMFST	RDM Bldgs & Grounds Site Miscellaneous Improvements	2,600	3,480	2,160	6,600	2,000	3,100	8,900	1,900	2,960	3,860	2,050	3,300	42,200
RDMEL	RDM Bldgs & Grounds: Elevators	2,600	3,300	3,100	2,800	3,300	3,500	3,700	3,800	3,500	4,200	4,800	4,800	44,000
STMEL	STM Bldgs & Grounds: Elevators	2,600	3,300	3,100	2,800	3,600	2,800	3,300	4,600	2,600	3,200	4,400	3,260	39,000
RDMWTS	RDM Bldgs & Grounds: Sumps	550	650	7,550	2,650	550	7,850	13,250	9,950	3,850	2,850	1,750	550	81,000
RDMHVC	RDM Bldgs & Grounds: HVAC	630	3,530	1,030	3,830	3,030	3,200	4,100	3,950	3,600	400	4,600	2,100	34,000
STMHVC	STM Bldgs & Grounds: HVAC	1,200	3,000	3,750	3,900	5,800	4,500	4,900	3,650	3,700	1,500	3,000	1,200	40,000
RDMWFP	RDM Bldgs & Grounds: Winterization	1,000	400	400	800	0	0	0	400	180	12,900	500	500	17,000
RDMCW	RDM Cooling Water System	0	350	425	400	0	320	330	0	350	350	470	0	2,995
STMCW	STM Cooling Water System	1,600	700	750	1,500	1,000	1,700	2,000	1,150	750	700	1,150	0	13,000
RDMCWS	RDM Circulating Water/Cooling Towers	1,000	1,000	400	500	1,900	1,350	1,400	1,450	600	1,700	500	1,700	13,500
STM CWS	STM Circulating Water/Cooling Towers	5,700	5,000	6,800	9,800	7,900	7,800	7,500	8,800	7,900	41,000	5,800	6,000	119,000
RDMPCS	RDM Controls/Computer Systems	500	580	16,900	500	1,000	1,700	1,000	1,000	1,000	900	1,000	500	25,000
STMPCS	STM Plant Controls	2,100	1,900	2,100	1,000	1,000	1,000	0	1,000	2,100	2,000	1,400	1,400	17,000
STMPLC	STM Controls/Computer Systems	3,100	4,100	54,480	10,100	2,500	16,200	5,600	5,500	4,200	2,900	4,300	4,200	117,580
RDMRID	RDM Recording/Indicating Devices	1,000	1,500	750	600	225	250	240	450	180	800	1,000	800	7,895
RDMRBLU	RDM Plant Lubrication	600	600	2,850	1,100	1,000	1,400	1,150	5,100	1,400	1,500	1,100	1,100	18,300
STMCMS	STM Consumables	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	30,000
RDMCEM	RDM Emission Controls: CEM	19,010	17,760	17,260	19,760	17,760	18,760	16,760	20,010	21,760	17,760	20,760	15,760	223,120
STMEVS	STM Emission Controls: CEM	2,500	1,700	1,750	2,500	1,400	1,400	1,000	1,200	650	4,200	3,100	1,600	23,000
RDMGUPCP	RDM Emission Controls: Precipitators	6,200	5,900	9,350	5,700	13,100	4,400	7,600	5,500	5,400	12,250	3,200	6,400	84,000
		500	700	5,800	400	800	1,100	500	800	1,400	300	300	700	13,000

Worksheet: StationTwo\2008\BREC Budget\Financial\Financial BREC O&M Non-Labor Budget Summary.xls

**BREC - Reid/Station Two
2008 O&M Non-Labor Budget (Gross)**

Number	Description	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	TOTAL
STOLAB	STO Laboratory	12,550	14,850	25,400	23,450	21,500	33,500	12,500	14,850	71,300	15,750	15,300	21,650	283,880
STOREDGE	ST Dredging Ash Ponds	0	0	0	0	0	5,000	0	0	0	0	0	0	5,000
STOPST	STO Buildings & Grounds	11,245	14,045	11,245	19,245	10,245	11,985	11,980	35,245	10,245	10,245	19,245	11,245	176,215
STOCSM	STO Consumables	5,000	5,000	5,000	5,000	5,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,000
RDOSGUPPE	RDO Mills and Feeders	13,500	13,500	13,500	7,000	13,500	0	0	0	0	5,000	5,000	5,000	35,000
STOCSGUPPE	STO Mills and Feeders	0	0	13,500	7,000	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	155,500
STOTR	STO Tool Room	0	0	2,550	0	1,000	0	1,500	0	350	1,000	0	1,000	7,400
STOTGN	STO Turbine/Generator	5,330	5,330	5,330	5,330	5,330	5,330	5,330	5,330	5,330	5,330	5,330	5,330	64,000
STOIS	STO Outside Industrial Svc	12,675	12,675	12,675	12,675	12,675	12,675	12,675	12,675	12,675	12,675	12,675	12,677	152,102
RD108FPO	STO Boilers and Burners	17,000	47,000	24,500	0	34,200	24,000	17,000	0	25,800	40,000	17,000	0	246,500
ST108XXO	R1 - Fall Planned Outage (Ops)	0	0	0	0	0	0	0	0	61,000	0	0	0	61,000
ST208FPO	H1 - Planned Outage (Ops)	0	0	0	0	0	0	0	0	0	0	0	0	0
RD108XX	H2 - Fall Planned Outage (Ops)	0	0	0	0	0	45,000	60,000	0	367,000	0	0	0	367,000
ST108xxx	R1 - Major Initiatives	0	0	29,000	0	0	0	30,000	30,000	0	50,000	0	0	179,000
ST208xxx	H1 - Major Initiatives	0	0	30,000	0	0	0	30,000	0	30,000	0	0	0	90,000
RD108USO	H2 - Major Initiatives	5,600	5,600	5,600	5,600	5,600	5,600	5,600	5,600	5,600	5,600	5,600	5,600	56,000
ST108USO	R1 - Unscheduled Outages	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	360,000
ST208USO	H2 - Unscheduled Outages	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	70,000
RD108FFG	R1 - Fall Planned Outage (Mtc)	0	0	0	0	0	0	0	0	785,200	0	0	0	785,200
ST108XXG	H1 - Planned Outage (Mtc)	0	0	0	0	0	0	0	0	0	0	0	0	0
ST208SPG	H2 - Spring Planned Outage (Mtc)	0	0	0	0	0	0	0	0	850,200	1,328,050	0	0	2,188,250
Total 2008 Budget		410,491	528,791	770,902	675,330	494,325	718,623	601,201	567,876	2,667,741	2,124,889	592,196	414,610	10,673,064
HMPL Allocation		100,160	120,428	194,849	179,511	126,746	174,275	139,068	146,571	527,666	610,135	132,311	99,860	2,559,580
BREC Allocation		0	0	0	0	0	0	0	0	0	0	0	0	0
WKE Share		310,331	400,363	576,054	495,819	367,578	544,348	462,222	421,304	2,140,074	1,514,754	459,885	314,750	8,013,484

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BREC - Reid/Station Two

2008 O&M Non-Labor Budget (Gross)

Number	Description	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	TOTAL
2008 SUMMARY (Gross)														
	Operations	59,000	101,000	79,060	53,500	81,200	76,750	66,235	71,800	72,160	92,800	77,000	53,012	892,717
	Maintenance	177,275	210,925	361,160	231,165	178,730	361,025	312,630	244,590	248,120	343,055	219,785	183,655	3,052,085
	Fuel Handling Operations	24,600	46,800	88,250	60,400	50,620	66,170	52,120	49,920	44,920	92,380	41,650	41,670	659,400
	FGD O&M	52,956	19,100	23,600	19,250	31,000	24,625	31,000	40,500	21,125	27,625	16,100	20,600	300,125
	Combustion Turbine Laboratory	100	950	91,656	69,806	59,058	76,106	55,158	55,056	64,258	66,856	61,706	53,708	780,674
	SCR O&M	12,550	14,850	25,400	23,450	21,900	33,600	12,600	14,850	71,980	15,750	15,300	21,650	108,200
	Administrative	17,110	17,110	18,476	(6,691)	15,719	23,047	16,750	18,159	21,080	2,473	10,155	17,135	170,523
	Outage O&M	42,600	42,600	42,600	42,600	42,600	42,600	42,600	42,600	2,110,480	1,358,050	35,600	42,600	3,887,450
	TOTAL	416,491	528,791	770,902	675,330	494,325	718,923	601,291	567,875	2,657,741	2,124,889	592,196	414,610	10,573,064
2008 SUMMARY (Net)														
	Operations	52,873	77,407	60,398	41,279	60,738	57,410	49,544	53,109	53,976	70,077	58,657	40,913	676,581
	Maintenance	137,256	163,672	271,967	179,057	133,345	280,191	246,529	183,517	185,119	258,360	169,444	127,096	2,337,752
	Fuel Handling Operations	18,244	34,676	65,723	44,675	37,349	49,197	36,540	36,915	33,238	68,781	30,989	30,826	483,353
	FGD O&M	15,409	14,287	21,393	14,399	23,188	18,420	23,188	30,294	15,892	20,664	12,043	15,409	224,497
	Combustion Turbine Laboratory	38,829	54,130	65,954	50,757	43,280	55,139	40,558	40,498	46,897	48,705	45,123	39,561	569,442
	SCR O&M	100	950	6,600	4,350	3,600	1,700	1,200	1,000	2,700	10,600	94,900	600	108,200
	Administrative	9,388	11,108	18,918	17,541	16,301	25,133	9,425	11,004	53,842	11,701	11,445	16,194	212,345
	Outage O&M	0	0	18,918	123,454	8,958	9,042	7,651	21,004	7,651	75,185	34,776	0	304,635
	TOTAL	316,331	400,363	578,837	520,510	388,970	546,156	463,753	425,505	2,141,605	1,529,791	466,840	314,750	8,074,411

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**BREC - Reid/Station Two
2010 O&M Non-Labor Budget (Gross)**

Number	Description	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	TOTAL
RDMAIR	RDM Air System	5,000	3,420	5,000	26,650	4,270	4,280	1,830	5,900	4,350	3,520	3,920	950	69,000
STMPAS	STM Air System	4,660	3,580	3,050	2,100	18,500	3,100	2,750	3,050	3,200	3,650	1,950	2,800	52,500
RDMASH	RDM Ash Handling	6,250	5,980	3,954	6,750	755	12,960	5,680	3,435	8,166	3,450	10,200	4,400	71,500
STMASH	STM Ash Handling	9,300	18,600	14,850	11,250	2,850	18,700	12,100	18,050	13,000	19,800	17,800	10,200	157,500
RDMBSU	RDM Boilers & Burners	10,300	12,500	11,300	6,500	2,900	3,350	4,790	3,900	2,850	12,800	12,500	9,200	92,570
STMSGU	STM Boilers & Burners	36,650	27,800	26,050	29,050	29,050	16,250	20,350	27,325	16,225	27,950	29,450	24,350	315,600
RDMFOS	RDM Fuel Oil System	900	600	400	800	650	665	575	500	210	700	500	900	7,400
STMFO5	STM Fuel Oil System	1,100	900	1,200	650	650	1,300	1,100	1,200	800	400	800	1,300	11,600
RDMCDS	RDM Condensate System	1,000	1,250	1,000	1,600	600	700	600	600	850	1,500	1,500	1,100	12,200
STMCD5	STM Condensate System	1,900	1,200	1,600	1,650	1,700	1,500	1,625	2,175	10,600	2,650	2,250	1,250	29,500
RDMOWS	RDM Demineralized Water System	900	1,300	1,000	1,000	1,000	800	900	1,000	400	1,600	1,300	1,300	14,000
RDMBFW	RDM Feedwater System	1,400	2,200	1,200	1,550	200	400	400	300	850	900	1,200	1,400	12,000
STMBFW	STM Feedwater System	5,000	5,900	9,600	6,700	4,900	6,000	5,200	5,200	7,000	7,000	7,900	5,500	75,500
RDMGUFDE	RDM Fans/Draft System	1,500	3,400	1,600	3,600	750	1,000	2,550	1,100	1,900	600	600	5,500	26,000
STMGUFDE	STM Fans/Draft System	1,000	4,750	6,250	5,500	4,000	6,500	3,200	3,900	7,350	2,600	3,700	1,600	51,950
RDMFPS	RDM Fire Protection	400	1,200	1,200	2,700	650	1,800	200	700	1,100	2,600	800	800	14,350
STMFPS	STM Fire Protection	1,000	1,000	3,500	1,500	3,000	1,000	1,500	1,500	2,500	1,000	3,500	1,000	22,000
RDMPLS	RDM Plant Lighting System	1,700	4,200	200	4,400	200	4,400	1,050	4,600	350	5,700	900	350	28,850
STMPLS	STM Plant Lighting System	9,300	5,800	10,450	5,800	8,600	4,750	5,500	6,200	4,700	8,100	8,000	6,500	83,500
RDMOHC	RDM Overhead Cranes & Hoists	3,000	600	3,000	1,900	0	5,500	2,000	400	3,700	800	1,000	0	21,900
STM0HC	STM Overhead Cranes & Hoists	0	2,500	3,600	4,000	0	1,000	0	4,000	4,000	1,800	1,500	1,000	19,200
RDMPCM	RDM Plant Communications	1,350	1,800	1,000	1,850	1,500	1,600	1,700	1,950	1,600	2,200	1,500	1,250	19,300
STMPCM	STM Plant Communications	1,600	1,600	1,800	1,500	1,950	2,150	2,300	1,800	1,800	1,600	2,100	1,300	20,500
RDMPST	RDM Bldgs & Grounds Site Mctclmnh	3,100	3,600	2,300	2,800	2,000	4,500	7,400	2,500	3,300	3,750	4,450	3,700	44,000
RDMEEL	RDM Bldgs & Grounds: Elevators	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,925	46,550
STMEL	STM Bldgs & Grounds: Elevators	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,925	46,550
RDMWTS	RDM Bldgs & Grounds: Sumps	3,250	1,650	8,050	4,250	1,050	5,150	15,150	9,450	3,650	4,050	1,250	3,150	60,100
RDWHVC	RDM Bldgs & Grounds: HVAC	588	3,988	1,988	3,688	2,688	3,468	5,075	3,600	5,050	340	3,250	2,040	35,720
STMHVC	STM Bldgs & Grounds: HVAC	1,200	3,630	3,750	3,750	5,750	5,750	6,275	4,250	4,100	2,050	5,000	2,285	47,800
RDMFPF	RDM Bldgs & Grounds: Winterization	1,510	1,000	600	500	500	0	0	410	1,050	15,410	170	640	22,000
RDMRCW	RDM Cooling Water System	400	350	125	400	200	150	330	400	350	150	170	0	3,020
STMRCW	STM Cooling Water System	1,000	700	950	1,000	1,500	1,700	1,500	1,150	750	700	1,150	1,500	13,600
RDMCWS	RDM Circulating Water/Cooling Tower	1,000	1,000	1,000	1,000	1,900	1,350	1,400	1,450	600	1,700	0	1,700	14,100
STM0WS	STM Circulating Water/Cooling Tower	5,400	4,550	6,650	6,350	6,700	8,050	5,550	5,550	6,000	15,900	5,200	5,200	81,100
RDMRPCS	RDM Controls/Computer Systems	1,000	1,000	16,000	500	1,000	1,100	1,000	1,000	500	1,100	1,000	500	25,700
STMRPCS	STM Controls/Computer Systems	1,800	2,000	1,900	1,700	1,800	1,600	1,000	1,200	1,900	2,000	1,300	1,300	19,700
RDMRCD	RDM Recording/indicating Devices	1,000	2,800	183,340	4,900	3,500	17,850	2,800	4,250	2,800	3,000	3,500	2,750	215,590
STMRCD	STM Recording/indicating Devices	900	1,150	760	800	225	450	740	450	180	900	1,000	600	8,290
RDMRBBLU	RDM Plant Lubrication	3,600	3,000	3,350	1,800	500	0	0	1,000	1,500	1,500	1,500	0	13,700
STMCSM	STM Consumables	27,838	26,088	23,793	26,463	26,063	24,441	25,717	29,994	32,148	25,575	28,754	26,488	324,351
RDMENV	RDM Emission Controls: CEM	3,500	1,570	2,100	2,550	820	1,050	600	900	1,700	4,200	3,100	1,970	24,000
STMENV	STM Emission Controls: CEM	6,100	7,050	9,050	6,700	14,000	4,200	7,500	5,250	5,200	11,650	4,200	5,400	85,500
RDMGUPCP	RDM Emission Controls: Precipitators	500	500	5,000	500	700	1,100	1,500	500	1,100	200	200	700	13,300
STMGUPCP	STM Emission Controls: Precipitators	4,600	6,500	7,900	4,900	8,000	6,000	5,500	5,000	6,500	5,000	3,500	500	61,500
STMFGXHEW	STM Emission Controls: SDRS Mist/EI	0	1,500	4,300	500	0	3,180	800	2,000	2,000	500	2,000	900	17,600
STMFGXPWS	STM Emission Controls: SDRS Foliab	400	200	100	200	500	200	100	200	100	200	100	500	2,800
STMFGXSAB	STM Emission Controls: SDRS Absorb	1,500	5,000	1,000	1,500	2,500	1,000	3,100	1,300	1,500	1,500	2,400	1,200	23,500

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**BREC - Reid/Station Two
2009 O&M Non-Labor Budget (Gross)**

Number	Description	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	TOTAL
STMFGXSB	STM Emission Controls:SDRS Scrubb	100	150	100	150	100	150	700	150	150	150	150	250	2,300
STMFGXSTK	STM Emission Controls:SDRS Scrubb	500	0	0	400	0	1,400	0	500	1,700	500	700	700	7,400
STMFGXTRW	STM Emission Controls:SDRS Thicker	750	750	750	750	900	7,750	800	750	1,050	750	1,150	750	16,900
STMFGD	STM Emission Controls: Scrubbers	7,250	7,800	22,700	10,450	6,650	14,225	2,900	5,700	12,300	9,675	13,100	2,200	114,950
STMSCR	STM Mex Reduction-SCR Maintenance	1,000	1,000	28,200	44,500	2,000	5,000	3,000	22,200	10,600	8,100	1,000	1,000	127,600
RDMWWS	RDM Effluent Control(Waste Water Tr	500	400	350	1,000	750	1,000	750	1,000	750	1,000	750	1,000	22,500
STRWWS	STM Effluent Control(Waste Water Tr	11,400	30,320	22,600	42,620	25,420	41,020	27,420	35,520	27,320	28,880	17,400	23,420	333,540
RDMCHS	RDM Fuel Feed: Fuel Conveying Syste	3,975	6,200	6,175	6,275	9,075	6,175	6,300	7,975	7,975	5,525	3,550	7,025	78,225
STMCHS	STM Fuel Feed: Fuel Conveying Syste	2,500	5,800	2,500	6,400	600	2,700	1,000	1,400	500	5,100	1,400	2,150	32,050
RDMGUFPE	RDM Fuel Feed: Mills and Feeders	6,100	8,250	12,500	9,500	5,500	7,400	6,000	4,500	9,000	7,000	8,500	3,500	86,150
RDMCHSBU	RDM Fuel Feed: Coal Unloading B	4,000	3,500	14,750	4,500	7,000	14,250	12,500	10,100	4,000	7,800	15,400	5,000	102,800
RDMCWINT	RDM Screenwell Maintenance	2,500	7,050	13,500	12,000	2,800	1,800	5,400	4,300	3,550	1,600	2,500	4,000	61,000
RDMPPWS	RDM Petable Water System	800	350	370	500	1,100	620	500	450	500	850	450	600	7,490
STRPWS	STM Service Water System	100	100	100	100	100	100	100	100	100	100	100	100	1,200
RDMEDT	RDM Switchgear/Bus	250	1,300	450	150	1,400	6,800	300	7,700	6,000	200	500	100	24,350
STMEDT	STM Switchgear/Bus	1,400	7,900	7,500	2,400	6,500	6,700	7,950	450	8,250	1,200	12,400	1,200	63,750
STMINGDGS	STM Diesel/Generator	100	70	0	600	200	0	200	500	0	1,500	0	800	3,970
RDMGEU	RDM General Use Equipment	1,700	1,700	2,700	1,700	1,700	2,700	2,700	1,200	3,200	1,700	1,200	2,700	24,400
STMTR	STM Tool Room	3,500	3,400	4,050	3,250	3,600	4,000	4,700	6,000	5,500	4,500	5,500	4,500	52,500
RDMRTGN	RDM Turbine/Generator	2,500	2,500	2,600	1,750	700	850	1,100	800	1,100	1,750	2,100	2,250	20,000
STMRTGN	STM Turbine/Generator	4,800	5,000	3,100	4,750	3,500	3,500	5,400	4,800	4,150	5,500	4,000	3,000	50,500
RDMRRCQ	RDM Non-Fuels Equipment	200	500	200	500	200	500	200	200	200	500	200	500	4,200
RDMRPVE	RDM Vehicles	3,400	4,900	2,900	4,050	5,050	4,850	3,450	2,800	4,450	6,000	4,100	2,350	48,400
RDMBBMT	RDM Maintenance Training	1,250	3,250	1,250	1,250	1,250	2,425	6,250	3,250	1,250	1,250	3,250	1,250	49,000
RDMEDGT	RDM Combustion Turbine-Electrical D	400	400	600	300	500	800	500	500	400	0	600	300	5,600
RDMFSPGT	RDM Combustion Turbine-Fire Protec	1,000	450	500	500	500	200	600	400	200	400	3,000	200	8,050
RDMRGT	RDM Combustion Turbine	0	1,000	7,000	3,200	2,000	0	1,800	0	3,000	17,700	61,100	1,000	97,000
RDMMECCL	RDM Mobile Fuels Equipment	6,700	6,700	6,700	6,700	6,700	6,700	6,700	6,700	6,700	46,700	6,700	6,700	173,400
STMREQ	STM Mobile Fuels Equipment - Fuel H	8,600	8,600	8,600	8,600	8,600	8,600	8,600	8,600	8,600	8,600	8,600	8,600	103,200
STOCHSBU	STO Coal Unloading Barge - Fuel H	0	0	12,000	0	12,000	0	12,000	0	0	12,000	0	0	70,000
STOCHPST	STO Buildings & Grounds - Fuel Hand	5,750	5,750	2,750	5,900	5,150	11,275	5,150	5,150	6,275	3,275	2,750	5,750	64,925
STOCHCSM	STO Consumables - Fuel Handling	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,000
STOCHTR	STO Tool Room - Fuel Handling	700	700	700	700	700	700	700	700	700	700	700	700	8,400
STOCHS	STO Outside Industrial Service - Fuel H	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	66,000
STOOSCR	STO HMPL SCR Operation	6,250	6,250	30,250	6,250	6,250	126,250	6,250	6,250	6,250	82,250	84,250	6,250	373,000
STMFGX	STM Limestone Grinding/Processing	4,888	14,588	21,388	18,188	12,988	11,988	10,688	8,688	7,188	13,188	10,188	6,188	140,160
STMREQCVH	STO Vehicles (inc, Gas, Oil)	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	39,600
STOFGD	STO HMPL FGD Shared Equipment	38,638	38,638	38,638	38,638	38,638	38,638	38,638	38,638	38,638	38,638	38,638	38,638	463,656
STOADM	STO Administrative	16,104	16,104	14,731	15,103	15,954	6,175	19,995	18,405	17,657	7,584	5,254	16,129	165,773
STOLAB	STO Laboratory	13,050	15,350	30,400	18,750	22,300	33,700	13,200	15,450	38,980	16,250	15,900	23,700	254,530
STORAGE	ST Dredging Ash Ponds	0	0	0	0	0	5,000	0	0	10,000	0	0	0	15,000
STOPST	STO Buildings & Grounds - Operation	11,640	14,640	11,640	19,595	10,595	12,095	12,095	35,595	10,595	10,595	19,595	11,595	180,375
STOCSM	STO Consumables - Operations	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,000
RDOSGUPE	RDO Mills and Feeders	5,000	5,000	5,000	5,000	0	0	0	0	0	5,000	5,000	5,000	35,000
STOOSGUPE	STO Mills and Feeders	13,500	13,500	13,500	7,000	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	155,500
STOTR	STO Tool Room - Operations	0	0	2,550	0	1,000	0	1,500	0	350	1,000	0	1,000	7,400
STOTGN	STO Turbine/Generator	5,330	5,330	5,330	5,330	5,330	5,330	5,330	5,330	5,330	5,330	5,330	5,330	64,000

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**BREC - Reid/Station Two
2009 O&M Non-Labor Budget (Gross)**

Number	Description	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	TOTAL
STOIS	ST Outside Industrial Services - Operat	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	155,000
ST05GU	STO Boilers and Burners	27,000	33,000	25,500	18,000	19,200	42,000	18,000	13,000	27,000	33,000	18,000	13,000	243,500
RD109xxx	R1 - Major Initiatives	0	0	0	18,000	0	19,500	95,000	10,000	19,500	0	0	0	182,000
RD09xxx	RD - Major Initiatives	30,943	30,943	30,943	30,943	30,943	30,943	30,943	30,943	30,943	30,943	30,943	30,943	371,315
ST109xxx	H1 - Major Initiatives	0	80,000	150,000	0	0	0	0	0	30,000	0	0	0	260,000
ST209xxx	H2 - Major Initiatives	0	0	0	0	0	0	38,000	0	0	0	0	0	38,000
ST109xxx	H0 - Meter Initiatives	30,943	30,943	30,943	30,943	30,943	30,943	30,843	30,943	30,943	30,943	30,943	30,943	371,315
RD109USO	R1 - Unscheduled Outages	17,500	17,500	17,500	17,500	17,500	17,500	17,500	17,500	17,500	17,500	17,500	17,500	210,000
ST109USO	H1 - Unscheduled Outages	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	70,000
ST209USO	H2 - Unscheduled Outages	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	360,000
RD109XXC	R1 - Planned Outage (Ops)	0	0	0	0	0	0	0	0	0	0	0	0	0
ST109SPO	H1 - Spring Planned Outage (Ops)	0	0	157,000	0	0	0	0	0	0	0	0	0	157,000
ST209XXC	H2 - Planned Outage (Ops)	0	0	0	0	0	0	0	0	0	0	0	0	0
RD109XXX	R1 - Planned Outage (Mtc)	0	0	0	0	0	0	0	0	0	0	0	0	0
ST109SPG	H1 - Spring Planned Outage (Mtc)	0	0	2,159,755	0	0	0	0	0	20,000	0	0	0	2,179,755
ST209XXG	H2 - Planned Outage (Mtc)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total 2009 R/STH Non-Labor O&M (Gross)		550,238	721,853	3,370,555	685,277	643,979	947,583	723,040	645,176	716,164	771,982	740,005	519,654	10,944,055
HMPL Allocation		122,597	166,981	973,000	155,565	153,317	205,040	148,759	149,247	167,138	176,702	151,344	114,884	2,584,475
Total 2009 R/STH Non-Labor O&M (Net)		427,771	554,872	2,405,555	529,711	490,661	642,522	574,281	495,929	549,027	594,980	578,661	404,970	8,249,580

BREC - Reid/Station Two

2010 O&M Non-Labor Budget (Gross)

Number	Description	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	TOTAL
RDMAIR	RDM Air System	4,450	3,520	2,970	26,000	4,720	2,370	15,250	5,000	2,950	2,970	3,100	1,300	74,400
STMPAS	STM Air System	1,000	4,050	3,000	8,300	12,000	3,000	3,000	2,150	9,900	3,700	2,100	3,000	55,200
RDMASH	RDM Ash Handling	5,450	6,150	4,050	7,350	1,500	10,950	5,350	3,350	7,900	3,300	6,100	3,800	67,000
STMASH	STM Ash Handling	7,650	17,000	15,200	13,100	6,450	27,650	24,100	18,800	6,700	11,450	11,750	9,950	170,800
RDMBSU	RDM Boilers & Burners	0	0	0	0	0	3,305	3,305	3,350	0	0	0	0	10,150
STMSGU	STM Boilers & Burners	28,450	24,050	35,450	32,450	28,950	51,050	29,150	24,125	30,425	28,450	25,950	24,750	364,250
RDMFOS	RDM Fuel Oil System	0	0	0	0	0	3,000	3,000	3,000	0	0	0	0	9,000
STMFOS	STM Fuel Oil System	900	1,700	1,500	1,150	450	1,100	1,100	1,800	1,300	500	700	900	13,100
RDMCDS	RDM Condensate System	0	0	0	0	0	3,000	3,000	3,000	0	0	0	0	9,000
STMCDS	STM Condensate System	2,750	1,650	3,700	1,650	2,250	2,750	2,575	2,575	11,500	2,150	3,400	1,250	38,200
RDMDWS	RDM Demineralized Water System	1,400	2,100	1,900	1,900	1,300	11,000	1,000	1,600	300	1,200	1,300	800	24,000
RDMBFW	RDM Feedwater System	0	0	0	0	0	3,000	3,000	3,000	0	0	0	0	9,000
STMBFW	STM Feedwater System	8,000	5,500	10,700	9,200	5,000	5,800	3,000	8,900	8,300	5,000	11,800	5,500	86,700
RDMSGUFDE	RDM Fans/Draft System	0	0	0	0	0	3,000	3,000	3,000	0	0	0	0	9,000
STMSGUFDE	STM Fans/Draft System	1,800	6,250	4,450	5,100	3,200	9,000	2,900	4,300	6,250	4,400	2,900	3,100	52,650
RDMFPS	RDM Fire Protection	700	850	3,400	700	650	500	500	700	2,100	2,600	750	700	14,350
STMFPS	STM Fire Protection	1,550	2,050	2,750	2,550	1,550	2,050	1,250	2,550	1,550	1,950	4,050	1,050	24,000
RDMPLS	RDM Plant Lighting System	2,400	5,700	300	5,100	400	2,100	2,100	4,700	600	3,600	2,100	550	29,850
STMPLS	STM Plant Lighting System	9,100	6,450	8,950	6,200	7,850	4,900	9,000	4,100	5,000	10,700	9,900	6,100	87,650
RDMOHC	RDM Overhead Cranes & Hoists	3,000	1,300	5,300	2,400	0	3,000	2,500	1,800	3,500	1,900	2,000	0	25,900
STMOHC	STM Overhead Cranes & Hoists	1,900	2,500	2,600	3,800	0	1,000	2,000	0	3,600	1,500	2,600	1,000	20,800
RDMPCM	RDM Plant Communications	1,450	2,200	1,000	1,850	1,500	1,700	1,800	1,450	1,600	2,200	1,000	1,850	19,400
STMPCM	STM Plant Communications	1,300	1,700	3,100	1,900	1,300	1,900	1,900	1,300	3,200	1,900	1,300	1,200	21,700
RDMFST	RDM Bldgs & Grounds Site Miscell	3,000	2,600	2,400	7,700	2,100	3,300	14,200	2,200	3,200	4,150	2,350	3,680	50,500
RDMEL	RDM Bldgs & Grounds: Elevators	3,600	3,600	4,100	4,100	4,100	4,100	4,600	4,100	3,600	4,600	3,600	4,600	48,700
STMEL	STM Bldgs & Grounds: Elevators	4,800	4,800	3,300	4,300	3,800	3,800	3,500	3,200	3,800	3,400	3,600	3,400	45,700
RDMWTS	RDM Bldgs & Grounds: Sumps	560	650	11,750	4,650	550	8,650	15,250	9,950	4,950	2,850	1,750	550	61,200
RDMHVC	RDM Bldgs & Grounds: HVAC	730	3,630	1,030	4,130	3,130	3,600	4,200	4,075	3,800	500	4,950	2,300	36,070
STMHVC	STM Bldgs & Grounds: HVAC	1,900	3,700	4,415	3,600	5,800	4,500	4,900	3,850	3,700	2,200	3,700	1,900	44,160
RDMPEP	RDM Bldgs & Grounds: Winterizat	1,500	900	900	800	0	0	0	400	100	12,900	1,220	1,000	19,720
RDMCW	RDM Cooling Water System	0	350	925	400	0	320	330	0	530	350	470	0	3,670
STMCW	STM Cooling Water System	1,600	700	1,800	1,500	1,000	1,700	2,000	1,150	750	700	1,150	0	14,050
RDMCWS	RDM Circulating Water/Cooling Tow	1,000	1,000	400	500	1,900	1,350	2,700	1,450	600	1,700	500	1,700	14,800
STMCS	STM Circulating Water/Cooling Tow	5,000	4,700	6,900	6,150	5,700	16,550	4,750	4,800	5,700	40,500	4,900	4,200	108,950
RDMPCS	RDM Controls/Computer Systems	0	0	15,000	0	0	0	0	0	0	0	0	0	15,000
STMPCS	STM Plant Controls	2,100	1,900	2,100	1,800	3,250	1,000	0	1,000	2,100	2,000	1,400	1,400	19,250
STMPLC	STM Controls/Computer Systems	3,100	4,100	121,090	8,100	2,900	16,200	5,600	5,500	4,200	2,900	4,300	4,200	162,190
RDMRID	RDM Recording/Indicating Devices	1,000	1,500	750	600	225	0	540	450	380	900	1,000	0	7,340

**BREC - Reid/Station Two
2010 O&M Non-Labor Budget (Gross)**

Number	Description	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	TOTAL
STMTRD	STM Recording/Indicating Devices	900	1,150	3,350	2,000	500	200	500	1,000	1,500	1,500	1,500	0	14,100
RDMBBLU	RDM Plant Lubrication	3,000	3,500	3,500	4,000	2,500	4,000	3,500	4,000	3,000	4,000	3,000	4,000	42,000
STMCSM	STM Consumables	21,320	20,070	19,570	22,070	20,070	21,070	19,070	22,320	23,070	19,070	22,070	17,070	246,840
RDMENV	RDM Emission Controls:CEM	0	0	0	0	0	3,000	3,000	3,000	0	0	0	0	9,000
STMESV	STM Emission Controls:CEM	6,200	6,900	9,850	5,700	13,100	4,400	8,600	5,500	5,400	12,250	3,200	5,400	86,500
RDMGUPCF	RDM Emission Controls:Precipitator	0	0	0	0	0	3,000	3,000	3,000	0	0	0	0	9,000
STMGUPRP	STM Emission Controls:Precipitator	4,000	6,500	7,000	4,000	8,000	6,000	5,750	5,000	6,750	5,000	3,500	500	62,000
STMFGXMEV	STM Emission Controls:SDRS Mils	0	3,100	3,200	600	0	4,100	200	2,200	2,500	200	1,800	900	18,800
STMFGXPWS	STM Emission Controls:SDRS Pola	200	200	300	300	300	200	300	200	100	200	100	100	3,800
STMFGXSAB	STM Emission Controls:SDRS Abs	1,500	5,000	2,000	1,000	2,500	1,000	3,500	1,300	2,000	1,500	1,400	1,200	24,000
STMFGXSBB	STM Emission Controls:SDRS Scr	150	150	150	1,000	100	200	150	150	150	100	150	100	2,550
STMFGXSTK	STM Emission Controls:SDRS Scr	500	0	1,000	1,200	0	1,400	600	600	1,700	700	700	700	7,800
STMFGXTRW	STM Emission Controls:SDRS Tric	600	5,250	750	750	350	350	750	1,450	750	1,450	550	750	17,300
STMFGD	STM Emission Controls: Scrubbers	3,350	7,900	26,800	11,550	3,950	14,325	3,500	5,800	13,450	10,775	10,300	2,300	114,000
STMFSR	STM Nox Reduction-SCR Maintena	4,000	4,000	51,200	26,500	4,000	5,000	4,000	22,200	24,000	17,500	4,000	4,000	170,400
RDMWWS	RDM Effluent Control(Waste Water	950	950	1,000	950	950	950	950	950	950	950	950	850	20,000
STMWWS	STM Effluent Control(Waste Water	350	350	350	1,500	350	400	300	400	300	400	550	350	5,600
RDMCHS	RDM Fuel Feed: Fuel Conveying Sy	11,400	33,300	25,600	45,400	25,920	39,720	27,920	28,920	28,020	23,820	17,900	23,420	330,440
STMCHS	STM Fuel Feed: Mills and Feeders	3,650	6,375	6,900	7,300	9,300	7,200	10,400	9,100	8,300	8,100	2,850	5,750	85,225
RDMGUPPE	RDM Fuel Feed: Mills and Feeders	0	0	0	0	0	3,000	3,000	3,000	0	0	0	0	9,000
STMGUPPE	STM Fuel Feed: Mills and Feeders	5,800	9,700	12,000	11,100	3,800	7,400	5,000	4,900	9,900	8,000	11,100	3,900	92,600
RDMCHSBUS	RDM Fuel Handling:Coal Unloadint	3,500	3,500	16,450	4,500	10,500	15,250	10,000	7,100	4,000	5,800	13,900	5,300	99,800
RDMCWSINT	RDM Screenwell Maintenance	200	3,700	21,300	14,200	13,200	200	7,200	4,500	8,450	200	200	200	73,550
RDMPPWS	RDM Potable Water System	800	350	370	500	2,350	300	900	450	500	800	450	600	8,370
STMPPWS	STM Service Water System	100	100	100	100	100	100	100	100	100	100	100	100	1,200
RDMEDT	RDM Switchgear/Bus	250	800	450	650	400	6,350	800	6,400	6,000	700	500	100	23,400
STMEDT	STM Diesel/Generator	100	70	300	600	300	200	250	330	200	1,200	14,400	1,300	67,100
STMGNDGS	STM Diesel/Generator	1,700	1,200	2,700	2,700	1,200	2,700	2,200	1,200	3,200	1,700	1,700	2,700	24,900
RDMGEU	RDM General Use Equipment	3,500	3,400	4,050	3,250	3,600	4,000	4,700	6,000	5,500	4,500	5,500	4,500	52,500
RDMTGN	RDM Turbine/Generator	0	0	0	0	0	3,000	3,000	3,000	0	0	0	0	9,000
STMIGN	STM Turbine/Generator	4,000	5,000	3,100	5,250	3,500	4,000	5,400	7,600	3,150	4,500	4,000	3,000	52,500
RDMREQ	RDM Non-Fuels Equipment	900	900	1,100	1,300	900	1,100	900	1,100	900	1,100	900	900	12,000
RDMPEV	RDM Vehicles	3,200	5,400	3,050	4,100	5,800	4,500	3,250	2,650	4,100	5,300	3,400	2,450	47,200
RDMMBMT	RDM Maintenance Training	1,250	3,250	1,250	1,250	1,250	24,250	6,250	3,250	1,250	1,250	3,250	1,250	49,000
RDMEDGT	RDM Combustion Turbine-Electric	0	400	800	300	500	900	4,500	500	500	0	600	300	9,300
RDMFSPGT	RDM Combustion Turbine-Fire Prol	0	350	400	2,900	300	700	600	400	0	1,700	3,000	200	10,650
RDMGT	RDM Combustion Turbine	100	100	600	5,100	100	100	100	100	4,100	20,100	66,900	100	111,000
RDMREQCLE	RDM Mobile Fuels Equipment	6,200	6,200	6,200	6,700	6,700	66,700	6,700	6,700	6,700	6,700	6,700	6,700	138,900

BREC - Reid/Station Two
2010 O&M Non-Labor Budget (Gross)

Number	Description	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	TOTAL
STMF0X	STM Limestone Grinding/Processor	5,535	15,235	21,634	16,834	13,934	12,134	7,034	3,834	7,334	12,464	5,334	6,334	127,540
STOMEQ	STO Mobile Fuels Equipment - Fuel	8,700	8,700	8,700	8,700	8,700	8,700	8,700	8,700	8,700	8,700	8,700	8,700	104,400
STOHSBUS	STO Coal Unloading Barge - Fuel H	0	0	13,000	0	13,000	0	13,000	-22,000	0	13,000	0	0	74,000
STOHPST	STO Buildings & Grounds - Fuel H	6,000	6,000	3,000	6,750	6,000	12,125	6,000	6,000	7,125	3,525	3,000	6,000	71,525
STOPST	STO Buildings & Grounds - Operat	11,895	14,895	11,895	19,695	10,695	12,195	12,195	35,695	10,695	10,695	19,695	11,895	182,140
STOCHSM	STO Consumables - Fuel Handlin	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,000
STOCSM	STO Consumables - Operations	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,000
RDOSGUPPE	RDO Mills and Feeders	0	0	0	0	0	0	0	0	0	0	0	0	0
STOAGUPE	STO Mills and Feeders	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	192,000
STOCHTR	STO Tool Room - Fuel Handling	700	700	700	700	700	700	700	700	700	700	700	700	8,400
STOCTR	STO Tool Room - Operations	0	0	2,550	0	1,000	0	1,500	0	350	1,000	0	1,000	7,400
STOTGN	STO Turbine/Generator	5,330	5,330	5,340	5,330	5,330	5,340	5,330	5,330	5,340	5,330	5,330	5,340	64,000
STOMEQCVH	STO Vehicles	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	40,200
STOFGD	STO HMPL FGD Shared Equipment	35,254	35,254	35,254	35,254	35,254	35,254	35,254	35,254	35,254	35,254	35,254	35,254	423,048
STOADM	STO Administrative	15,453	15,453	14,037	10,654	15,978	5,944	17,148	18,171	19,371	3,403	4,603	15,483	155,693
STOLAB	STO Laboratory	14,050	16,350	25,400	20,050	23,300	43,700	14,200	16,450	37,180	17,250	16,900	23,700	269,530
STDREDGE	ST Dredging Ash Ponds	0	0	0	0	0	5,000	0	10,000	0	0	0	0	15,000
STOCHOIS	ST Outside Industrial Service - Fuel	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	72,000
STOIS	ST Outside Industrial Service - Ope	13,400	13,400	13,400	13,400	13,400	13,400	13,400	13,400	13,400	13,400	13,400	13,400	160,800
STOSCR	STO HMPL SCR Operation	9,000	9,000	9,000	21,000	9,000	129,000	9,000	9,000	9,000	95,000	87,000	9,000	394,000
STOSGU	STO Boilers and Burners	27,000	30,000	18,000	19,200	19,200	39,000	18,000	0	27,800	30,000	18,000	9,000	236,000
ST240xxx	BREC Additions	22,765	22,765	22,765	22,765	22,765	22,765	22,765	22,765	22,765	22,765	22,765	22,765	273,182
RD110xxx	R1 - Major Initiatives	130,550	30,550	155,050	395,550	30,550	60,000	370,000	0	497,550	30,550	30,550	30,514	1,761,414
ST110xxx	H1 - Major Initiatives	0	0	142,000	80,000	0	0	0	0	0	0	0	0	222,000
ST240xxx	H2 - Major Initiatives	0	0	22,000	55,000	0	0	30,000	0	0	0	0	0	107,000
RD110USO	R1 - Unscheduled Outages	0	0	0	0	0	0	0	0	0	0	0	0	0
ST110USO	H1 - Unscheduled Outages	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	360,000
ST210USO	H2 - Unscheduled Outages	7,000	7,000	3,500	0	3,500	7,000	7,000	7,000	7,000	7,000	7,000	7,000	70,000
RD110SPO	R1 - Spring Planned Outage (Ops)	0	0	0	0	0	0	0	0	0	0	0	0	0
ST110XPO	H1 - Planned Outage (Ops)	0	0	0	0	0	0	0	0	0	0	0	0	0
ST210SPO	H2 - Spring Planned Outage (Ops)	0	0	0	0	0	0	0	0	0	0	0	0	0
RD110XPO	R1 - Planned Outage (Mtc)	0	0	0	0	0	0	0	0	0	0	0	0	0
ST110XPG	H1 - Planned Outage (Mtc)	0	0	0	0	0	0	0	0	0	0	0	0	0
ST210SPG	H2 - Spring Planned Outage (Mtc)	0	0	967,619	1,451,195	0	0	0	0	0	0	0	0	2,419,005
Total 2010 R/STII Non-Labor O&M (Gross)		577,902	577,347	1,709,005	2,770,577	562,581	961,454	1,001,896	694,004	1,087,739	587,271	676,092	460,570	11,765,042
HMPL Allocation		112,263	139,634	462,627	690,812	133,938	233,135	152,731	143,482	162,938	169,923	163,118	167,707	2,552,306
Total 2010 R/STII Non-Labor O&M (Net)		465,719	437,713	1,326,378	2,079,764	428,643	728,359	849,165	451,402	944,802	527,348	523,573	352,869	9,115,735

**HENDERSON STATION TWO
2004-2005 BUDGET**

WKEC DRAFT BUDGET (FEBRUARY)	\$ 22,622,444
FINAL BUDGET (MAY)	\$ 22,622,444

CHANGES IN DRAFT BUDGET

Inlet Air Nozzles on Coal Mills Cancelled after budget was approved	\$ 160,000
Disc Brakes Barge Unloader Cancelled after budget was approved	\$ 75,000
Retube #5 Heater Added after budget was approved	\$ 250,000

Due to the Thermal Event (over heating of H-1 boiler) on August 23, 2004, the scheduled 2005 Spring outage was cancelled and moved to the Fall of 2005 so that repairs could be made. The Thermal Event required the following items to be moved from the 2004-2005 Budget to the 2005-2006 Budget.

H-1 Install Sootblower Controls	\$ 50,000
H-1 Install Turbine Controls	\$ 600,000
H-1 Replace Relief Valve	\$ 50,000
H-1 UPS Upgrade	\$ 50,000
H-1 Replace Coal Mill Liners	\$ 460,000
H-1 Replace 6 Sootblowers	\$ 100,000
H-1 Replace Clinker Grinders	\$ 60,000
H-1 Replace Primary Air Fan	\$ 125,000
H-1 Paint Condenser Water Box	\$ 60,000

HENDERSON STATION TWO 2005-2006 BUDGET

WKEC DRAFT BUDGET (FEBRUARY)	\$32,404,768
FINAL BUDGET (SEPTEMBER)	\$26,779,772

CHANGES IN DRAFT BUDGET

Install Dry Fly System Moved to 2006-2007 Budget - more time needed to complete engineering study	\$ 1,500,000
Replace Economizer Tubes Removed - further study required	\$ 1,400,000
Contingency for Water Wall Replacement Reduced to \$400,000 - budget estimate was overstated	\$ 1,000,000
Install H-2 Data Acquisition System Reduced to \$225,000 - budget estimate was overstated	\$ 500,000
Replace Primary Air Fans Reduced to \$310,000 - budget estimate was overstated	\$ 360,000
Modification of H-1 & H-2 Rapper Sectional Removed - Henderson did not agree with project	\$ 300,000
Replace Barge Winch Added	\$ 225,000
Install H-2 Particulate Monitor Moved to 2006-2007 Budget	\$ 300,000
Engineering Study for Fly Ash System Added	\$ 150,000
Install Air Dryer Increased to \$115,000 - budget estimate was understated	\$ 100,000
Replace H-2 Sootblower Moved to 2006-2007 Budget	\$ 180,000

**HENDERSON STATION TWO
2005-2006 BUDGET (CONT.)**

Replace 3 Cooling Tower Gear Boxes Eliminated one Gear Box - Reduced Budget by \$50,000	\$ 155,000
Modification of Coal Mill Inlet Nozzles Moved to 2006-2007 - more time needed to complete study	\$ 175,000
Replace H-1 & H-2 Furnace Probes Moved H-1 Probes to 2006-2007 Budget - Reduced Budget by \$60,000	\$ 120,000

**HENDERSON STATION TWO
2006-2007 BUDGET**

WKEC DRAFT BUDGET (FEBRUARY)	\$ 23,162,283
FINAL BUDGET (APRIL)	\$ 23,381,610

CHANGES IN DRAFT BUDGET

Replace D&H Dozer Removed from Budget - Error: Green Station project not Henderson	\$ 600,000
Replace Bobcat Loader Moved to 2007-2008 Budget - not needed at this time	\$ 35,000
Install Heat Compression Dryer Increased to \$200,000 - under budgeted	\$ 130,000
H-2 Precipitator Modification Removed from Budget - further study required	\$ 300,000
Purchase 20 Ton Crane Moved to 2007-2008 Budget	\$ 200,000
Furnace Probe Replacement Added	\$ 100,000
Emulsified Sulfur Feed System Added	\$ 165,000
Drying Agent for Wet Coal Added	\$ 231,000

**HENDERSON STATION TWO
2007-2008 BUDGET**

WKEC DRAFT BUDGET (FEBRUARY)	\$ 36,264,354
FINAL BUDGET (MAY)	\$ 31,825,269

CHANGES IN DRAFT BUDGET

Replace Roof on Coal Handling Building Moved to 2008-2009 Budget	\$ 100,000
Replace Roof on Equipment Building Moved to 2008-2009 Budget	\$ 50,000
Purchase 2 Sump Pumps Moved to 2008-2009 Budget	\$ 40,000
Replace Bobcat Loader Moved to 2008-2009 Budget	\$ 37,000
H-1 & H-2 Distributive Control System Engineering Services Reduced to \$548,000 - budget estimate overstated	\$ 986,000
Install Auto Drain Valves on Heaters Moved to 2008-2009 Budget	\$ 300,000
Replace 2 Cooling Tower Gear Boxes Moved to 2008-2009 Budget	\$ 110,000
H-2 Spring 2008 Outage Moved to Fall of 2008	\$ 4,067,100

**HENDERSON STATION TWO
2008-2009 BUDGET**

WKEC DRAFT BUDGET (FEBRUARY)	\$38,977,837
FINAL BUDGET (JULY)	\$37,772,592

CHANGES IN DRAFT BUDGET

Replace Layer of Catalyst Reduced to \$1,483,000 - over budgeted	\$ 1,900,000
Replace Air Pre-Heater Baskets Reduced to \$774,000 - over budgeted	\$ 875,000
Install C.C.S. Field Devices Reduced to \$604,000 - over budgeted	\$ 750,000
Install Mercury Monitors Cancelled - compliance not required at this time	\$ 442,000
Upgrade of CEM's Building Cancelled - not required at this time	\$ 80,000
Replace H-2 Scrubber Bleed Line Moved to 2009-2010 Budget	\$ 200,000
Replace 6 Wall Blowers H-2 Reduced to 3 wall blowers - Reduced Budget by \$40,000	\$ 80,000