

IM Monthly Report



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Mississippi Public Service Commission Kemper IGCC Project

May, 2016

URS

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Executive Summary

URS Corporation (URS), later acquired by AECOM, was requested by the Mississippi Public Service Commission (MPSC) to provide Independent Monitoring services for the Kemper Integrated Gasification Combined Cycle (IGCC) Project located in Kemper County, MS. The scope of services includes monthly reporting by URS (AECOM) and its subcontractors, the Independent Monitor (IM), of the status and prudence of the on-going engineering, procurement, construction and startup activities performed by Mississippi Power Company (MPC or the Company), its parent Southern Company and subsidiary Southern Company Services (SCS), and its subcontractors on the project. This IM Monthly Report provides the results of this assessment for the reporting period of May, 2016, and review of the project status reported by MPC for the period from March, 2016 to May, 2016 (EPC Status Production Meeting Reports April 20 and May 23, 2016, March and April 2016 PSC Reports, and Kemper County IGCC Weekly Executive Summary, Metrics and Control Meeting Reports through May 29, 2016).

During this reporting period, the IM has conducted weekly status review meetings with MPSC staff. Several meetings, teleconferences and reviews were also conducted with MPC and SCS staff, as described below (refer to other Report Sections where referenced for more details):

- May, 2016 – Accounting audit of financial records from end of February, 2016 through end of March, 2016 held at MPC offices in Gulfport, MS (Appendix C).
- May, 2016 – Daily monitoring of on-going site construction and startup activities at the jobsite (Appendix E).
- May 9 and 10, 2016 – Review of project EPC status held at the jobsite (Appendix D).
- Week of May 9, 2016 – Review of gasifier startup activities held at the jobsite (Section 1.10).
- June 1, 2016 – Update from MPC on status of open RFI's (Appendix B).

Project Status through April, 2016 (Unless Noted Otherwise)

Engineering - The gasification island design performed by KBR, and the SCS design of the combined cycle island and the balance of plant (BOP) work, was 99% complete. All major Revision 0 design packages have been issued for construction. Remaining effort will be focused on resource pool and scope addition activities, including:

- Resource pool activities.
- Support to construction on key contracts – emergency notification, heat tracing, and fire protection systems.
- Design Management of Change (MOC) process implementation and training.
- Design revisions from PHA, support requests, updated vendor information, and scope additions.
- Supporting Startup in turnover package checkouts.
- Addressing PSSR functional turnover punchlist items.

Procurement - All major equipment and commodity orders have been placed. Major equipment deliveries are complete. Remaining effort will be focused on final construction and startup needs including procurement of miscellaneous items as identified (scope additions). During May, one new award was issued for gasifier finite element analysis, and three vendor recommendations were accepted for lignite dryer inlet and outlet feeder rotors, TFA support for hydraulic valve actuators, and analytical testing and consulting services.

Construction (through May 29, 2016) – Plant construction is complete for the combined cycle unit, nitrogen plant, water plant, water storage pond, ash storage, buildings, lignite delivery facilities, piling and caissons, underground utilities, mass grading, concrete, structural steel, equipment, piping, instrumentation, cable tray, cable, terminations, conduit, tubing, and heat tracing. Plant work in progress includes equipment insulation (98% complete, about 18,000 SF remaining), and pipe insulation (98% complete, about 21,000 LF remaining), plus ongoing punchlist and scope addition activities. Overall plant construction was 99% complete (through April, 2016).

Transmission – Right of way acquisition and construction is complete for all 11 line segments and all 8 substations. MPC will continue to monitor transmission right of ways for any needed restoration and maintenance.

Pipelines – Right of way acquisition and construction is complete for all 3 pipelines. Long term sales or supply contracts have been signed with the City of Meridian (water supply), Denbury Resources Inc. (CO₂ sales), Treetop (CO₂ sales), Tennessee Gas Pipeline (NG supply), Air Liquide (nitrogen supply from onsite Air Separation Unit), and Martin Product Sales (sulfuric acid and ammonia sales by truck).

CO₂ contracts originally specified CO₂ delivery dates have been exceeded. On June 3, 2016, MPC cancelled its contract with Treetop Midstream Services, LLC for the purchase of 30% of the CO₂ to be captured at the Kemper IGCC plant. On that same day, the Company revised its contract with Denbury Resources, Inc. to provide for the purchase of 100% of the captured CO₂. The revised contract provides for termination by Denbury at its discretion if CO₂ deliveries do not occur by July 1, 2017.

Liberty Mine - Current land control is 100% complete for the initial five year permit area. Construction activities are complete. Mine is operating and stockpiling lignite. Total actual spending for the mine development through April, 2016, including mine Allowance for Funds Used during Construction (AFUDC), was unchanged at \$232.2M, which is the forecast final cost.

Mississippi Economic Impact

IM has reported for each contract and purchase order whether MS bidders were involved, and if so, status and basis of the award decision (refer to Appendix F). Through April, 2016, contracts totaling \$1.975 billion have been awarded to MS companies, and total MS spending is \$1.959 billion (about 30% of the total, including uncapped costs). MS workforce contributed 450 construction jobs and 334 plant/mine jobs in April. A total of 557 MS Companies have provided construction, equipment, material or professional services for the Project.

Key Concerns

The following Project Execution related concerns have been reported with associated resolution status:

- Differential settlement and/or slope movement during initial loading of lignite stockpile in the storage dome - *Survey benchmarks will be monitored for settlement and slope stability during initial stockpile placement. IM suggests MPC consider development of mitigation plans in the event excessive settlements and/or slope movements are discovered, and staging of the initial placement of the lignite stockpile.*
- System testing has discovered numerous pressure leaks due primarily to inadequate installation, quality control, and quality assurance of flanged and welded connections (bolt torqueing, gaskets, seals, pipe alignment, missing or inadequate welds) – *MPC is repairing the leaks when identified. Key concerns are noted below:*
 - Extraction Air Compressor – *trim cooler bundle leaks on EAC-1 being repaired; commissioning on hold.*
 - Syngas cooler leaks – *leak repairs and hydrotest completed on both Trains; IM has concerns with future leaks under operating conditions.*
 - Coal mill loop leak rate exceeding maximum – *leak testing and repairs will continue until the leak rate is achieved on all six trains (5 of 6 achieved).*
 - Coal dryer loop leak rate exceeding maximum – *leak rate achieved on all 6 trains.*
 - CCAD/CFAD piping leaks – *repairs in progress.*
 - WSA duct leaks - *repairs completed; insulation being reinstalled.*
 - Multiclone bottom hoppers – *weld repairs completed; insulation being reinstalled.*
- Train 2 venturi scrubber pumps cavitation issues – *continue to be evaluated during the lignite feed tests.*
- Venturi scrubber solids carryover issues (4 scrubbers/train) – *back flush system for the strainers will be installed on all 6 trains (3 of 6 complete).*
- Recovered water filters plugging – *testing new type of recovered water candle filters on one train for higher solids content; plugging and extended back flushing durations continue; the other 2 sets of filter elements have been ordered.*
- Gasifier A refractory repairs – *touching up the riser hard face refractory; additional refractory repairs and modifications of inserts/nozzles in the standpipe are underway; prepping for the thermal refractory dry out.*
- Gasifier B refractory repairs - *hard face refractory replacement and dry out at the lower mixing zone in the Riser and one area at the J-leg is complete; bulkhead removal and final inspection in progress.*
- Coal dryer rotary air lock valves plugging - *new internals with nitrogen cannons for the inlet and HP discharge valves, and larger inlet valve motors, will be installed on all 6 trains (2 of 6 complete); addressing expansion joint failures on the inlet valves.*
- Particulate Control Devices - *the blow back pots on all four PCD's are being replaced (3 of 4 complete); flex seal seam repairs are complete.*

- Ash moisturizer system – *modifications in progress for all 4 trains, including new baffles, larger rotary feed motors, new pneumatic slide gate valves, and new rotary feeders on the discharge chutes.*
- Wastewater treatment pumps - *minimum water circulation could not be achieved on the Wastewater Ammonia Purifier Bottoms Pumps and the Wastewater Ammonia Stripper Reflux Pumps. Engineering is investigating this issue which may require larger motors.*
- Ammonia storage deluge containment – *temporary system installed to contain overspray; redesign of permanent solution in progress.*
- PDAC testing – *temporary nitrogen supply installed on Train 5 to provide required testing pressure; scope addition approved to install permanent solution.*
- WSA SO2 Converter internals – *hangers will be replaced with stainless steel; steam blows will be conducted with original hangers; catalyst loading being delayed.*

Contractor Hotline

MPC has established a toll free telephone number for contractors or others to provide observations of any concerns with improper activities associated with the project. Comments are collected by a third party and reported to MPC for follow up investigation and action. The IM is copied on all correspondence and will report status of all cases. There were no new concerns filed this reporting period (May, 2016).

A summary of the twenty five (25) claims received to date and their status, including corrective actions taken, is included in Appendix I.

Project Document Status

The overall status of the project document reviews are summarized in Appendix B to this monthly report. Most of the RFI's have been posted, reviewed and closed (26 open items remaining). Primary concerns noted by the engineering disciplines are summarized below:

- Scope Additions – *MPC has posted updated list through April 20, 2016 for approved items (\$118M) and through May 3, 2016 for pending items; weekly updates are being provided to the IM Site Team for all FCR's, OCR's and Resource Pool Listings.*
- PHA Action Items – *MPC has posted updated list through April 8, 2016 (157 open items of 3413 total items, 23 of these are high priority).*
- Vendor Recommendations – *there are 32 open items, mostly certified budget amounts (refer to Appendix F).*
- Process and Technology – *IM has additional questions on some of the posted responses (new RFI's were created); responses to several of these items were posted in May and will be reviewed at the site on June 14. MPC responses to RFI's 2-859 and 863 are still pending.*

Project Cost and Schedule

In the April 2016 PSC Report, MPC reported no change in forecast completion date in third quarter of 2016, and an increase in forecast capped cost of \$19 million to \$5.366 billion, including an increase in base contingency of \$3.6 million to \$41.9 million and no

change in Schedule Risk at \$35 million. Forecast uncapped costs increased by \$1.0 million in April to \$1.375 billion.

Total capped spending for the plant through April, 2016, with deduction for Department of Energy (DOE) funding, was \$5.110 billion. Overall plant EPC was 99% complete. Uncapped spending through April was \$1.260 billion. Refer to Appendix G for the PSC Report Summary.

As of May 29, 2016, the current working schedule indicates TOD of 8/21/16, which is a 284 day slip from the November 2014 rebaseline date, and an 11 day improvement from the 4/24/16 report. The first critical path to First Syngas Production - Train 'B' scheduled to begin July 2 is through receipt of anhydrous ammonia which began on June 4, Fill Ammonia Storage Drums, Ammonia Purification Commissioning, First Syngas Production Train 'B', and Reliable/Clean Syngas – Train 'B', which is currently scheduled to be achieved by July 22. The second critical path through Gasifier 'A' is through Gasifier 'A' Refractory work, Return to Temperature on Gasifier 'A', Refractory Cure Gasifier 'A', First Syngas Production Gasifier 'A', Reliable/Clean Syngas Gasifier 'A', Testing and Tuning of CTs on Syngas, and TOD on August 21.

Key drivers on secondary path include:

First Syngas Production - Train 'B'

- Operational Readiness for First Coal Feed Gasifier 'B' (1 day off critical path), driven by completion of remaining action items, is scheduled to be achieved by July 1.
- Operational Readiness for Sour Water Ammonia Fill (1 day off critical path), driven by MOC completion, is scheduled to be achieved by June 3.
- Operational Readiness of the Ammonia Flare (6 days off top path), driven by completion of MOC's, is scheduled to be achieved by May 30.
- Lignite Dryer Ready for First Lignite Feed (7 days off critical path), and completion of Dryer #5 commissioning activities. The air locks are scheduled to complete in time to support First Lignite Dryer (Dryer #5) ready for First Coal Feed Test 1 (TP2027) on June 12.
- Recovered Water Filter Procurement and Installation (8 days off critical path) - delivery is scheduled for June 20, with installation completed by June 23.

Gasifier 'A'

- Operations Ready for First Coal Feed Gasifier 'A' (2 days off critical path), driven by the estimated completion date of the remaining action items.
- AGR Refrigeration Readiness (2 days off critical path), driven by the receipt of ammonia on June 24th. This delivery is being expedited, and is expected to improve. The AGR Refrigeration system is scheduled to be complete July 12.
- WSA Readiness (6 days off critical path) - RSI is to return to the site June 6 to recommence catalyst loading. RSI will start by loading catalyst in WGS 'B', the CO2 compressor and then WSA catalyst on June 16, with WSA hot standby achieved by July 10.
- AGR 'A' Readiness (8 days off critical path) - AGR 'B' punch list items are scheduled to be addressed by June 9, before filling the system with Selexol (TP2036). AGR 'B' is currently scheduled to be ready to support Reliable/Clean Syngas Available Train 'B' by

June 24. AGR 'A' Selexol fill will follow AGR 'B', and 'A' will be ready to support Reliable/Clean Syngas Available Train 'A' by July 24.

Overall project execution status was reviewed on May 10, 2016 at the jobsite. Refer to Appendix D for detailed meeting notes. Primary concern is additional schedule slippage and associated cost increases, and unknown startup and technology risks.

- Additional schedule slippage – MPC has reported a delay in COD to third quarter of 2016. MPC will continue to evaluate startup schedule and remaining risks, and has included \$35 million for schedule risk in the April cost forecast, equivalent to September 30, 2016 COD; however, recent trends in startup progress (1.1% per month over the last six months, 1.9% in May) will have to improve to meet the forecasted COD. Schedule risks remain for completion of punchlists and PSSR action items, and on-going issues with the lignite preparation and ash removal systems have yet to be resolved. IM believes remaining process risks are being under estimated, and results of the latest Quantitative Risk Assessment (QRA 11) indicate current COD of end of September is about 30% probable (P30 is 10/7/16). P90 date is early December. If COD requires 100% capacity, then this will add at least one month to the QRA dates for CTA instrumentation and inspection.
- Associated cost increases – While increases in the indirect project costs due to schedule delays are capped and therefore being absorbed by the MPC shareholders, the rate payers are also at risk for alternative power generation and AFUDC costs, to the extent these are allowed by the MPSC.
- Unknown startup and technology risks – key concerns include premature equipment failures, coal feed, ash removal, refractory reliability, overall plant process control integration, chemical product quality and off taker performance. Issues associated with several of these concerns (equipment failures, coal feed, ash removal, refractory reliability), have already been reported and are still being addressed.

Accounting

Topp McWhorter Harvey, PLLC (formerly known as Nicholson & Company, PLLC and hereinafter referred to as TMH) has completed the accounting audit of the special-purpose Historical Schedules of Capped and Uncapped Plant Costs of the Project for the historical project-to-date and month-to-date periods ended March 31, 2016, and the examination of special-purpose Forecasted Schedules for the period beginning April 1, 2016, through the completion of the Project.

On June 1, 2016, the Company filed their April, 2016, monthly Form 8K with the SEC which increased its Capped Plant Cost Current View (forecast) for the Kemper IGCC Project to approximately \$5.366 billion, net of DOE grants and Cost Cap Exceptions. The Company's Monthly Status Report through April, 2016, increased its Current View (forecast) of Total Exemptions and Exceptions (Non-Capped Cost) by \$1.0 million to approximately \$1.375 billion.

The Company has revised its cost estimate subject to the cost cap for the Kemper IGCC to include approximately \$19 million related to operational readiness and challenges in start-up and commissioning activities, including an \$8 million change in the estimate reported last month for Contingency, as well as the additional cost of repairs and modifications to the lignite dryers and refractory lining inside the gasifiers.

On June 3, 2016, the Company cancelled its contract with Treetop Midstream Services, LLC for the purchase of 30% of the CO₂ to be captured at the Kemper IGCC plant. On that same day, the Company revised its contract with Denbury Resources, Inc. to provide for the purchase of 100% of the captured CO₂. The revised contract provides for termination by Denbury at its discretion if CO₂ deliveries do not occur by July 1, 2017.

On April 5, 2016, an amendment to the contract with the Department of Energy (DOE) was executed to provide an additional \$136.7 million in grant monies for the Kemper IGCC Project. On April 8, 2016, the Company received the additional grant funding (\$136.7 million) from the DOE which is expected to be used to reduce future rate impacts for customers.

On February 25, 2016, Greenleaf CO₂ Solutions filed a notice of appeal in the Mississippi Supreme Court regarding the decision in Mississippi Public Service Commission docket 2015-UN-80. On February 29, 2016, the Company filed a Motion to intervene as a party in the appeal. The appeal seeks to reverse the Commission's In-Service Asset Order and Temporary Rate Order awarding rate relief to the Company related to the Kemper Project. On March 3, 2015, the Commission, as appellee, filed a Motion to Dismiss the Appeal. On May 5, 2016, the Mississippi Supreme Court granted the Mississippi Public Service Commission's Motion, dismissed Greenleaf's appeal, and assessed all costs of the appeal to Greenleaf. On May 19, 2015, Greenleaf filed a Motion for En Banc Reconsideration, which requests that the full Court reconsider the three-judge panel's decision to dismiss the Greenleaf Notice of Appeal. The Company will vigorously defend the matter, and the final outcome of this matter cannot now be determined.

As reported in the Form 10Q for the first quarter ended March 31, 2016, Mississippi Power Company disclosed that the Securities Exchange Commission (SEC) is conducting a formal investigation of Southern Company and Mississippi Power Company concerning the estimated costs and expected in-service date of the Kemper IGCC Project. Southern Company and Mississippi Power Company believe the investigation is focused primarily on periods subsequent to 2010 and on accounting matters, disclosure controls and procedures, and internal controls over financial reporting associated with the Kemper IGCC Project. Southern Company and Mississippi Power Company are cooperating fully with the SEC. The ultimate outcome of this matter cannot be determined at this time; however, it is not expected to have a material impact on the financial statements of Mississippi Power Company.

Discipline Summaries

Environmental / Permitting

The IMs review of documents provided by MPC and LF has not identified any major concerns or issues. However, prior to Commercial Operation of the IGCC Plant, there will be additional monitoring reports (Mitigation Action Plan, Wetlands Mitigation and Water Quality and Macroinvertebrate Monitoring Reports) prepared by LF for MDEQ and the Corp of Engineers as required by permits issued for the project. These documents and reports should be provided to and reviewed by the IM to insure that the permit requirements for the plant, off-site linear facilities and lignite mine continue to be met (see Appendix B, RFI 2-698). MPC posted updates in February through the end of 2015 currently being reviewed by the IM.

IM is monitoring status of approvals for the two (2) remaining plant permits:

- Title IV Acid Rain Permit – Application was submitted 10/13/11; MDEQ issued draft permit on 2/11/14; Public comments have been received.
- Title V Operating Air Permit Modification – Application was submitted on 8/22/14; MDEQ issued draft permit.

Process and Technology

Implementing site monitoring plan for gasifier startup by IM gasification technology specialist. Last site visit was conducted week of May 9 (see Section 1.10). Next visit will be conducted week of June 13. IM has additional questions on some of the posted RFI responses (new RFI's were created); responses to several of these items were posted in May and will be reviewed at the site on June 14. MPC responses to RFI's 2-859 and 863 are still pending.

Lignite Delivery Facility

LDF construction is 100% complete. Coal is being maintained and monitored in silos 2, 5, and 6 for lignite coal runs. Approximately 10,000 tons of coal is being maintained in the dome to support lignite testing. Mobile coal screening equipment continues to screen the coal at the coal storage pile before it is sent to the truck dump. Dirt work was completed early this month and the new 500 thousand gallon above ground modular tank was erected. This above ground modular tank will be used initially as part of the plants water balance due to excess water during the lignite testing and a place to store the water from the LDF sump when cleaning out the coal fines. Crews have completed welding the HDPE piping spools for the above ground modular tank with commissioning complete on the fill side of the tank.

Procurement

Initial IM reviews of Vendor Recommendation Forms are complete. Most known key Contracts and Purchase Orders, including construction and Liberty Mine facilities, have been included, totaling about 500 items (excluding O&M Service Contracts, MS Tier II contractors, and Transmission). Refer to IM September 2014 Monthly Report (Appendix F) for the last update of completed reviews.

IM conducted closeout audit of procurement packages and prepared a listing of over 200 additional items not reviewed. From this list, the IM identified and requested about 75 items for review. MPC has begun posting the requested documents which are currently being reviewed. Refer to Appendix F for an update of the current reviews (32 open items remaining).

Site Activities (Plant metrics through May 22, 2016)

The following activities are **ahead of or on schedule** – Steel, Pipe, Instruments, Cable Tray, Tubing, Cable, Terminations, Conduit, Process Heat Tracing, Freeze Protection Heat Tracing, Equipment Insulation, and Pipe Insulation. The following activities are **behind schedule** with the percentage behind - Startup (10%).

Mechanical work has been proceeding in the following areas - Area 210 - Waste Water & Selexol Storage Area, Area 140 – Tankage Area, Area 150A/250A - Coal Prep Area, Area 120/220 – Gas Cleanup, Area 150/250 - Gasifier Area, Area 160 – Wet Sulfuric Acid Area, Area 230 – Selexol Area (North), Area 130 – Selexol Area (South), Area 105 – Train 1 Gas Clean Up Area, Area 110 – Compressor Area, Area 180 – CO₂ Compression and Dehydration Area, and Area 260 – Sulfuric Acid Recovery Area.

Electrical & Instrumentation work has been proceeding in the following areas - Area 105 – Train 1 Gas Clean Up Area, Area 110 – Compressor Area, Area 120/220 - Gas Cleanup Area, Area 130/ 230 – Selexol Area (South & North), Area 140 – Tankage Area, Area 150/250 - Gasifier 1 & 2, Area 150A/250B – Coal Feed 1 & 2, Area 160 – Wet Sulfuric Acid Area, Area 170 – Pipe rack, Area 180 – CO₂ Compression/Dehydration Area, Area 200 - Main Electrical Building, Area 210 - Waste Water Treatment Area, and Area 260 – Sulfuric Acid Recovery Area.

Gas Clean - Up (Areas 105, 120, and 220) – All train A and B WGS Reactors and COS Hydrolysis Reactors have been loaded with catalyst and are under a nitrogen cap. Due to several clearance violations during the final nitrogen capping of train A COS Hydrolysis Reactors catalyst loading was suspended for the Mercury Adsorbers until the SO₂ Converter in the WSA unit is ready for catalyst loading. RSI left the site and will return to load the catalyst in the Mercury Adsorbers June 6. Clean up and storing the unused catalyst was completed. COS Hydrolysis Bypass valve XV-14522 is on site, installation is still pending.

Process Air (Area 110) – EAC 1 (Extraction Air Compressor) was being prepped for a run the first week of May but clearance issues prevented the start of the commissioning. Filtering was completed on both Recycle Gas Compressors CO-1008LO and CO-2008LO lube oil reservoirs with the new fill caps being installed. EAC 1 (Extraction Air Compressor) commissioning began Thursday (5/19) with a coupled run but was stopped due to a bad solenoid valve. The valve was changed out and commissioning resumed Friday morning (5/20). During the compressor run over the weekend (5/22) the cooling water safeties lifted on the Extraction Air Trim Cooler HX-1019. The compressor run was stopped and crews are prepping to pressure up and bore scope the bundle to determine the source of the leak. Startup will perform a coupled run on Recycle Gas Compressor CO-1008 the first week of June to verify the alignment work that was performed in November 2015 due to vibrations during commissioning.

Selexol (Areas 130 and 230) – 130 and 230 Areas, crews continue to work on PSSR and punch list items, insulating, and painting in both areas. In the 230 area, an obstruction in the CO₂ Recycle Compressor (CO-2066) piping is being investigated by Elliot before commissioning can resume. Crews removed a valve downstream to inspect the piping and strainers for the obstruction. No obstructions were found so restoration is underway for commissioning in June. Seal flushing in both trains is complete with pumps holding pressure. AGR Sump Drum DR-0057 was filled with demin water and the Closed Selexol Sump Pump circulated water through the “B” side Regenerator to commission the complete loop for service. During the circulation the Cricket Filter FL-2060 was tested. A total of 63 gaskets from trains A and B Closed Selexol Sump loop will be changed out for cathodic protection Testing will begin on the Process Condensate Trim Heater (HX 2027) and Makeup Water Trim Heater (HX-0059) after all the reactors (in the Gas Clean Up Area) have been loaded with catalyst. Prepping continues for Selexol fill in both areas now scheduled for June 9.

Tankages (Area 140) –The new Ammonia Storage Drum Loading Dry Lock Arm connections were installed. Testing the alarm system around the Ammonia Storage tanks was completed. Friday (5/20) to ensure the system was working in advance of loading the Ammonia Storage Drums scheduled for June 4, 2016. A temporary containment is being erected around the perimeter of the Ammonia Storage Drums to contain deluge water in the event the system is activated. The current permanent concrete containment will not be adequate to contain all the water because of the deluge spray pattern. Some of the water will collect on the outside of the permanent containment and would go down the storm drains. Engineering is designing a permanent containment which will be built at a later date to contain all of the deluge water.

Gasifier (Areas 150 and 250) – The following activities are in progress or complete:

- Gasifier A – Over the weekend the bottom head section of the Standpipe/J-Leg had the veneer coating applied, allowed to air dry (12 hours), and hammered tested. Scaffolding was then erected inside of the Standpipe Sunday for crews to apply the caps over the studs on Monday (5/23) and started applying the veneer coating Tuesday morning (5/24) at the bottom of the Standpipe and will continue to work their way up the Standpipe this week. Thorpe is averaging around 8 to 9 feet per day.
- Gasifier B –Blot Tech began the dry out in train B Gasifier Riser and Standpipe Sunday (5/22) with the first hold at 250 degrees to balance the system. The temperature was then raised at different rates and hold points until 1000 degrees was reached on Tuesday (5/24) and held for 12 hours. After the 12 hour hold the temperature is reduced at a rate of 50 degrees/hr until they reach 400 degrees which was reached early Wednesday morning. The burners have been turned off and the system is cooling naturally using dampers to control the flow rate at 75 degrees/hr. Brand will re-scaffold the Standpipe and Riser for the bulkheads and baffles to be removed and Thorpe will take advantage of the scaffolding to inspect the refractory.
- Train A and B PCD's – Lavender was onsite Monday and completed the flex seal repairs in FL-1106 and FL-1206. Tuesday (5/24) they installed the new blow back pots in FL-1206 and the back pulse piping Wednesday (5/25). Thursday (5/26) scaffolding

was installed so Lavender could bolt the back pulse piping to the top flanges and torque the bolts. The new blow back pots for FL-1106 are being fabricated and are scheduled to arrive June 6.

- PDAC offline testing for the first time on train 5A and 5B was completed with 100 psi nitrogen. Coal was dry cycled from the baghouse through the storage vessel, lock vessel, dispense vessel, and PDAC feeder back to the baghouse through the deinventory line successfully with some plugging, valve, and instrumentation issues encountered. The coal rate in offline mode was in the 10 to 45 tons/hr range. Tubing with a gauge and throttling valves have been installed as a bypass around the HP nitrogen control valve to increase the nitrogen pressure for PDAC testing. Engineering is underway to design a system to ensure LP nitrogen is available during startup. In the meantime hoses are being used to supply LP nitrogen during testing of the PDAC's.
- All 4 of the 3 Way Steam Valves will have the gaskets and bolts changed out when this material arrives. The bolts will be tensioned after the gaskets are replaced.

Coal Prep (Areas 150A and 250A) – The following activities are in progress or complete:

- Train 5 dryer – Plugging issues on the Inlet Rotary Air Lock have prevented continuous lignite runs early this month. A 12 hour continuous lignite run Tuesday night (5/17) at around 170,000 lb's/hr was accomplished until plugging issues and paddles breaking free in Ash Moisturizer D stopped the lignite test run. Additional lignite runs were attempted but a torn expansion joint under the Inlet Rotary Air Lock and problems with the ash removal system has prevented lignite runs this week. Crews have made the repairs and began deinventorying the coal in the system Thursday night (5/19) and will continue today (5/20) for the outage this weekend. Modifications were completed on the dryer system over the weekend of 5/21 and early into the next week. The last modification was completed Tuesday (5/23) which was adding the new nitrogen cannon to the HP discharge Rotary Air Lock. Wednesday (5/24) the lignite testing resumed late in the afternoon and into the night with limited continuous runs. The belts on the roll crusher had to be changed out along with plugging in the Inlet Rotary Air Lock and in Ash Moisturizer D were the issues.
- Train 6 dryer – The new Inlet and HP Discharge Rotary Air Locks that were received were fabricated incorrectly (shafts were too long) and have been sent back to the Birmingham fab shop. These valves were received and have been reinstalled along with the new nitrogen cannons.
- New discharge (Fluid Bed Dryer) pneumatic knife gate valves and modified discharge chutes have been installed in all trains as of Wednesday (5/25).
- The new Rotary Feeders for each train (6) have been installed in the coal deinventory discharge chutes which discharge into the Pyrite removal system along with the new supports. All but one of the modified chutes has been installed as of Wednesday (5/25).

- Reinsulating the multiclone lower hoppers is underway now that the repairs to the reinforcing pads are complete.
- An acceptable dryer fan leak rate of 311 SCFM's was achieved on train 4 Tuesday (5/24). The acceptable dryer leak rate is 450 SCFM's (up from 250 SCFM's) (all 6 dryers completed)
- Acceptable mill fan leak testing continues on train 4 this week. The acceptable leak rate is 150 SCFM's. (5 of 6 mills completed, trains 1, 2, 3, 5, and 6)
- Testing the new set of filter elements in one of the 3 Recovered Water Candle Filters (FL-0001A/B/C) from Pall was monitored during the limited lignite run Wednesday (5/25) and Wednesday night with plugging and extended back flushing durations. Testing with water with coal fines stored in Frac tanks from previous lignite test runs is being run through the new filter elements at 200 gpm when water is not available during the lignite runs. The other 2 sets of filter elements have been ordered.
- A dehydration unit will be connected to the lube oil system for the LP Vent Gas Compressor after temporary power is run to the unit sometime this week.

Ash Removal System (Area 150A/250A) – The following activities are in progress or complete:

- Ash Moisturizer “D” continues to experience issues with the rate the coal is being feed into the Rotary Feeder from the new pneumatic slide valve. Operators are working on the percentage the valve may be able to open and close. This may be a problem because this valve is part of the SIS system. This lack of control contributes to the water and coal mixture rates not being correct. During the lignite run Wednesday night (5/25) the metal expansion joint above the new slide gate valve ruptured. The lignite run has been suspended until the expansion joint can be examined and or replaced.
- Ash Moisturizers B and C are being modified to match A Moisturizer as parts come on-site.
- Addressing dust suppression issues identified in Mill Alleyway continue.

Wet Acid (Area 160) – The 24” lined pipe tee on the Scrubber water pump header that was removed and sent off for repair is due back the first week of June. Inspection inside the SO₂ Converter has uncovered incorrect material (galvanized) on several hangers which are supposed to be stainless steel and carbon steel. These hangers are being removed from inside the SO₂ Converter and new hangers fabricated. On Thursday (5/19) all three blower fans were run to test the expansion joint repair on the 100” duct and commission Mist Control Unit A on the SO₂ Converter. The rep was on site to commission the SCR injection heaters, Air Heaters HX-0075A & B and the Ammonia Evaporators HX-0077A & B, for NO_x control of the unit. During the commissioning both HX-0075A and HX-0077A heater elements megged bad and will need to be removed and dried out with the rep on site when he returns later. Commissioning the SCR

injection heaters, Air Heater HX-0075B and Ammonia Evaporator HX-0077B was completed Monday (5/23). Tying into the plants existing 325# common steam header was completed during the outage the weekend of May 21. West of the unit two Wabash package boilers were set and leveled. These package boilers will be used to supplement medium pressure steam (325#) for the upcoming Combustion Turbine B outage and later if one of the HRSG's goes down during syngas testing due to unreliable syngas to the turbine and the plant goes to One on One. These package boilers will supply medium pressure steam (325#) to the Gasifier, AGR, and Gas Clean Up areas in the event this happens. Catalyst loading has been delayed for 6 weeks. Repair to the 100" duct was completed and will be insulated.

Pipe Rack & BOP (Area 170) – Construction is complete.

CO₂ Compression / Dehydration (Areas 180 and 260) – Vacuum testing with helium tracer gas is complete in the Refrigeration unit. The system is being laid up with nitrogen. Lube oil flushing on Refrigeration Compressors will be ongoing through the month of May and first half of June. Hydrolazing on the underground CO₂ product line continued following the wash water change out the first week of May. The underground CO₂ product line (in fence) was viewed with a sewer cam on Monday (5/23) with no issues seen. Dry out is currently underway. Train B CO₂ Compressor motor exciter realignment was completed Tuesday (5/10) and the hood reinstalled Wednesday (5/11) with a successful uncoupled test run on Wednesday (5/17). Final alignment on the coupling was completed Thursday (5/19). Supports are being fabricated for the coupling guard and will be installed in June. The crane will be used to install the 4 other valves for the different stages of the compressor over the next month when the supports are installed. Insulating continues on the Dehydration and Refrigerant Subcooler piping in the 180 area.

Flare (Area 190) – Restoration on the lower section of the A HP flare 10-inch line is complete with all clearances released Tuesday. The nitrogen sweep on the Ammonia flare to purge the header was successfully completed ahead of lighting pilots on Tuesday (5/31).

Waste Water Treatment (Area 210) – Circulating water between the Wastewater Storage Tank, Wastewater Drum and the downstream H₂S and the Ammonia Stripper Columns is complete. Crews applied steam to the stripper column Reboilers to raise column temperatures to operational levels while circulating. The Reboilers have been initially tested and tuned for initial operating conditions. Sour Water area crews are in Ammonia ready mode with testing the alarm system completed. Some issues with hearing the alarm are being reviewed. Working PSSR and punch list items in the Sour Water area continues. Piping modifications were completed for the final tie in to the Selexol Tank with the temporary fill lines. This connection will be completed as the date for filling the tank approaches.

Acid Storage Tanks and Off Spec Acid Tank (Area 260) – Construction is complete.

Nitrogen Plant (Area 260) – The nitrogen plant continues to support the plant and startup this month.

Combined Cycle HRSG's and CT's (Areas 510, 520, 530, and 540) – Construction is complete.

Steam Turbine & Auxiliary Boiler Area (Area 550) – Construction is complete.

Water Treatment (Area 570) – Construction is complete.

Cooling Towers (Areas 580 and 590) – Construction is complete.

Main Gate Security (Area 700) – Construction is complete.

Sewer Plant and Ash Storage Pond (Area 800) – Evaporating water from the above ground modular storage tanks is on hold due to the steam lines having to be elevated over the road crossing. Once these lines have been elevated evaporating water from the modular storage tanks will resume. Trucks are being filled with water containing TSP and oil from the above ground modular tanks for disposal with around 25 to 30 loads/day being hauled off.

Process Water Reservoir (Area 900) – Construction is complete.

Safety

Project Safety Summary: Since the beginning of the project, there has been 84 reportable incidents at the site with 39,085,281 man hours worked. This year, the site has worked 2,043,624 man hours with 2 reportable incidents. The project RIR stands at 0.20 for the year and 0.43 for the Project Total to Date.

Schedule

The construction schedules for remaining base scope dated 5/29/16, and the schedule for scope additions dated 5/29/16, are included in Appendix E.

Key metrics reported through May 29 are summarized below:

- Equipment insulation installation was 1% behind plan overall. Work in the Gasifier will resume as Startup activity allows. Gasifier quantities were rescheduled to reflect availability of the work. Most of the remaining quantity is in Gas Cleanup and is scheduled to restart in July.
- Pipe insulation installation was 1% behind plan overall. Work in the Gasifier will resume as Startup activity allows. Most of the remaining quantity is in the Gasifier expected to resume in June, with the bulk of the work taking place in July.
- Construction to Startup punchlist summary for base scope (excluding scope additions) shows a reduction in remaining open items from 384 on April 24 to 378 on May 29.
- Overall, turnover packages from construction to startup are on schedule as 965 are received out of a plan of 965 to date (99% complete, 3 of 968 packages remaining). The only remaining packages are Gasifier Structure Personnel Elevator that will be turned over on June 18, Potable Water that will be turned over on June 19, and Cathodic Protection that will be turned over on June 24 (delayed by damaged cables).

Startup

- At the end of April, total startup employee staffing was at 276, including 24 SCS startup employees, 245 supplemental, and 7 OPCO's staff; plus 444 startup supplemental craft support and 47 I&C field technicians (grand total of 767 – an increase of 57 from March).
- Through May 29, startup progress was 90.3% complete overall (1.9% increase from April 24) vs. planned 100%.
 - 945 TOP's have been commissioned out of a total of 968 (98% complete). Of the 23 behind plan, 13 are complete for commissioning with the exception of completing all I/O loop checks. 33% (318 of 968) have been turned over from startup to operations (mostly CC and associated BOP).
 - Startup test packages are 66% complete (63 of 96 complete). Of the 33 late test packages, 14 are currently in progress.
 - Overall, I/O checks are <1% behind plan (>99% complete, 148 of 31,438 remaining). Scope additions will potentially continue to change the total point count over the coming weeks as loops are added or deleted. These changes will be incorporated into the plan. The majority of the remaining loops are not available to be checked due to needed design, construction, or release from clearance. A plan is in place to address and expedite the availability of this I/O. There is no impact to test package execution or milestone completion.
 - Startup to Operations punchlist summary for base scope (excluding scope additions) shows a decrease in remaining open items from 15,197 on April 24 to 13,870 on May 29 (1,059 of these are high priority).
 - Refrigeration Vacuum Test/Leak Checks were successfully completed.
 - Gasifier 'A' Standpipe backup layer refractory gunning was completed.
 - HP Flare 2 and LP Acid Gas Flare PSSR sign offs completed.
 - Gasifier 'B' veneer layer completed.
 - Completed Gasifier 'B' hardface refractory layer.
 - Completed PCD work on Gasifier 'B'.
 - Awarded Plant O&M contract to McAbee.
 - Completed dryout of Gasifier 'A' backup layer refractory.
 - Completed motor run-ins on CO2 Product Compressor and Extraction Air Compressor.
 - Completed dryout of Gasifier 'B' hardface layer refractory.
 - Completed application of Gasifier 'A' standpipe veneer layer and anchors.

Operations and Maintenance

Overall 262 of the planned 309 permanent employees are on staff (317 of 309 including contractors). Current supplemental contract staff will be considered for remaining 47 permanent positions.

Process Safety Management (PSM) program development:

- GT board operator training complete – can provide trained operators to support any test package.
 - Overall Risk Management Plan (RMP) is complete and will be filed with EPA prior to implementation – RMP for HRSG ammonia system was approved by EPA.
 - There are 14 PSM elements – 10 of the 14 are complete (ready for chemicals).
 - Executing PSM consultants' recommendations for the remaining 4 elements - Process Hazard Analyses, Pre Startup Safety Review, Process Safety Information, and Mechanical Integrity.
1. Process Hazard Analysis - all eight PHA's requiring updates are complete, working through recommendations (95% complete). MPC has posted updated PHA Action List through April 8, 2016 (157 open items of 3413 total items; 23 of these are high priority).
 2. Pre-Startup Safety Reviews - Initial Equipment Walkdowns using PSSR checklist are complete for all 16 required systems (346 TOPs walked down out of 346, 100% complete). PSSR durations are a concern (included in monthly schedule risk assessments). 4 of 16 PSSR's are complete and two are ready for sign off. As of 5/29/16, there are 406 high priority PSSR punchlist items remaining open (progress improving as 71% completed in May), and 21 high priority action items remaining open (progress improving as 55% completed in May).
 3. Process Safety Information - PSI data collection is nearing completion and should be finished by end of May.
 4. Mechanical Integrity – RAM analysis management review is complete, working with vendor on comments. Final report to be completed in 1 to 2 months.

Land

IM Review of Documents and Purchases from the Kemper County Courthouse, Lauderdale County Courthouse and Update on the Lawsuit Concerning the Kemper IGCC Power Plant Site and Liberty Mine, Kemper County, Mississippi

In the April 2016 report, the IM reported that there were no new land purchases of mining land in the last month, discussed a spreadsheet of purchases of mining land in Lauderdale County since December 2013 and the status of the Kemper County lawsuit.

In the May 2016 report the IM will discuss eight new purchases of mining land in Kemper and Lauderdale Counties located during a May 31, 2016 visit to the Kemper County and Lauderdale County Chancery Clerks' Office, update the information provided last month regarding land

purchases in Lauderdale County, MS., discuss updates provided by Mississippi Power Company and developments in the Kemper County lawsuit.

The IM has reviewed information about the purchase of new mining land for the Kemper County IGCC Power Plant and Liberty Mine, the update on the purchase of mining land in Lauderdale County, information provided by Mississippi Power Company (MPC) and the status of the Kemper lawsuit and determined the following:

- MPC made eight new purchases of coal mining land in Kemper and Lauderdale Counties, MS. in the last month covering over 110.88 acres, more or less. Some of these purchases covered interests in the Crogman W. Wooten Estate.
- MPC has purchased [REDACTED] acres, more or less, in Lauderdale County rather than the [REDACTED] acres reported last month for over [REDACTED] or an average of [REDACTED] an acre since December 2013. The [REDACTED] acres had an appraised value of [REDACTED] or [REDACTED] an acre for land, structures and timber. These purchases in Lauderdale County included many houses/structures and smaller tracts which partially accounts for the higher per acre value.
- Since 2012 MPC has purchased a total [REDACTED] acres, more or less, of land for over [REDACTED] or an average of [REDACTED] per acre. This information was gathered at the courthouse and provided by MPC. The IM has only reviewed the appraisals for some of the [REDACTED] acres purchased. The IM has reviewed appraisals for [REDACTED] acres purchased with an appraised value of [REDACTED] per acre.
- MPC provided information that states MPC has purchased [REDACTED] +/- surface acres for a total purchase price of [REDACTED] or [REDACTED] per acre. MPC did not provide the date these amounts were calculated. The IM will attempt to determine the 1,454 acre difference in the IM and MPC figures.
- MPC has leased [REDACTED] net surface acres for coal/lignite mining that contain [REDACTED] net coal acres per information provided by MPC.
- MPC has mined [REDACTED] acres for coal/lignite through April 30, 2016 producing [REDACTED] tons of coal/lignite. MPC has paid [REDACTED] in royalty or [REDACTED] per ton in royalty payments according to MPC.
- The parties to the Barham versus Mississippi Power Company lawsuit are still waiting for a decision from the Judge dealing with the Summary Judgment Motions filed by both parties and argued at a court hearing held August 27, 2015 in the Chancery Court in Philadelphia, MS.