

**Engineering Office Location: Munster, Indiana**  
**Industrial Engineering Experience Project List**  
**Period: 2002-2025**

PROJECT NUMBER	PROJECT TITLE	CLIENT	PROJECT PHASES	LOCATION	DESCRIPTION	YEAR COMPLETED
2261	BOF - Boiler Feed Water/Deaerator Installation, Construction Management and Commissioning	ArcelorMittal	I,II,III,IV	Indiana	Provide Design, Equipment construction and commissioning support to the BOF Boiler Feed Water system to include a deaerator system to improve water quality and corrosion. Mechanical, Structural, Plumbing, with tank and pump drawings, electrical and controls	2025
2260	BOF -Expansion Tank and Heat Exchanger Engineering Investigation	ArcelorMittal	I,II	Indiana	Provide troubleshooting and investigation engineering services related to the BOF operations of a Expansion Tank that is deteriorating and integrity issues.	2025
2202	Blooming Mill Steam Piping Modifications	Cleveland Cliffs	I,II, III	Indiana	Provide evaluation of steam Blooming Mill Structure and Pipe Stress Analysis. Provided engineering calculations, documentation per OSHA requirements. Provided upgrade improvements for stiffening of existing pipe hangers and safety assessment of failing structure.	2023
2201	No. 3 Steam Piping Modifications	Cleveland Cliffs	I,II, III, IV	Indiana	Provide Survey, Engineering Calculations, Design Documents and Construction Documents for the re-routing of a 12" steam line away from an elevated conveyor. Developed flexible and durable design that utilized abandoned railway as an anchor for Steam line and new hydrogen gas line.	2023
1108 / 2140	BOF - Surge Tank Installation, Construction Management and Commissioning	ArcelorMittal	I,II	Indiana	Provide Design, Equipment construction and commissioning support to the BOF Boiler Feed Water system to eliminate surging in the piping from utilities and improve storage capacity to facilitate efficiencies of the heating water to BOF vessels locally. Mechanical, Structural, Plumbing, 30 ft high x 18 ft diameter with surge pumps, electrical and controls	2019
1086	BOF - LMF Project Management	ArcelorMittal	I,II	Indiana	Provide Project Management Support to the steel mill for projects related to the Reactor and Caster facilities projects.	2019

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1085	Chlorine PSSR and PSM activities support	ArcelorMittal	I,II	Indiana	Chlorine Piping and Standardization Upgrades. Process Safety Management to standardize nine chlorine site facilities as well as locations for safety equipment and functioning. Installation review, operations analysis. Chlorine Gas used: chlorinators, reductors, tubing, CPVC pipe, strainers, process water	2017
1084	BOF Gas Cleaning Classifier Lifting Beam Improvements	ArcelorMittal	I,II,III	Indiana	Provide Structural Engineering analysis to plant utilities for hood cooling screens and classifier building lifting beam. Provided engineering calculations, documentation per OSHA requirements. Provided upgrade improvements for stiffening of existing lifting beam assembly. Reviewed classifier screw lifting and handling mechanics and logistics. Provided concepts for improvements for alternate lifting beam and carriage assemblies. Provided structural engineering calculations and design documents towards the implementation of new improvements which included: structural plans and details, piece mark assemblies, logistics and material handling plan and notes for removal using new improvements.	2015
1083	80" HSM Clarifier Improvements	ArcelorMittal	I,II	Indiana	Provide Engineering Analysis to plant utilities for improvements towards water clarifying equipment and processes. Data analysis, system sampling to understand associated problems. Market and vendor research for comparisons of equipment operations. Maintenance concerns and recommendations for stream lining the system. Inlet and drain piping modifications to reduce clogging.	2014
1082	Chlorine PSM Compliance Audit	ArcelorMittal	I,II	Indiana	Chlorine PSM Compliance audit. Review and update of the costumers PSM program, questionnaire and operating procedures.	2014
1071-03	Hot Stip Mill - Motor Room and basement Cooling - Engineering Study	ArcelorMittal	I,II	Indiana	Provide engineering support for the improvements towards a motor room and basement cooling. Areas included: fan upgrades; additional ventilation, filters, balancing and pressurization	on going
1071-2	Hot Stip Mill - West Ventilation House Upgrade	ArcelorMittal	I,III,IV	Indiana	West Ventilation House Upgrade. Ventilation design, blowers, cooling coils, filters, mono rail, access doors, foundation, piping and instrumentation. Engineering design and commissioning..	2014

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1071-1	Hot Strip Mill - East Ventilation House Upgrade	ArcelorMittal	I,III,IV	Indiana	East Ventilation House Upgrade. Ventilation design, blowers, cooling coils, filters, mono rail, access doors, foundation, piping and instrumentation. Engineering design and commissioning..	2014
1071	Hot Strip Mill - Motor Room Cooling - Engineering Study	ArcelorMittal	I,II	Indiana	Provide engineering support for the improvements towards a motor room Cooling System. Areas included: fan upgrades; filters, monitoring, cooling coils, adjustments, and maintenance.	2013
1070	Chlorine PSM Compliance Audit	ArcelorMittal	I, II	Indiana	Chlorine PSM Compliance audit. Review and update of the customers PSM program, questionnaire and operating procedures.	2014
1069	Chlorine System Localized Warning Systems	ArcelorMittal	I,III,IV	Indiana	Chlorine Monitoring - Localized Warning Systems. Review, make recommendations and equipment selection for the customers chlorine gas hazard monitoring system. To include additional monitoring devices, standardization of lights and horns and inner-plant traffic warning signs	on going
1068	Chlorine Piping Modifications and Safety Upgrades	ArcelorMittal	I,III,IV	Indiana	Chlorine Piping and Standardization Upgrades. Process Safety Management to standardize nine chlorine site facilities as well as locations for safety equipment and functioning. Installation review, operations analysis. Chlorine Gas used: chlorinators, reductors, tubing, CPVC pipe, strainers, process water	2014
1061	BOF Hood Cooling Engineering, Pump upgrade, monitoring and system diagnostics Engineering and Equipment Design	ArcelorMittal	I,III,IV,V	Indiana	Provide engineering and survey support for the improvements towards a BOF Hood Cooling System. Areas included: monitoring, pressure, temperature, flow measurements; Pump upgrades; Heat Exchanger fan upgrades, adjustments, and maintenance.	2013
1058	Chlorine Monitoring, Commissioning and continue ssafety support services	ArcelorMittal	III,IV	Indiana	Review, make recommendations and equipment selection for the customer's site chlorine gas hazard related systems. To include additional monitoring devices , public notifications, advance warning system, standardization of warning lights and horns, update of P and IDs	2013

Project Phase Legend: I - Data Collection, II - Data Analysis and Prioritization of Investment, III - Engineering Design and Construction Period Services, IV-Commissioning, V - Training and Advocacy, VI- Monitoring, Benchmarking and Critique

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1057	BOF - LMF Project Management	ArcelorMittal	I,III,IV,V	Indiana	Provide Project Management Support to the steel mill for projects related to the Reactor and Caster facilities projects.	2013
1056-02	LMF Engineering, basin pumping additional capacity Engineering and Equipment Design	ArcelorMittal	I, II, IV, V	Indiana	LMF Hot Well water system additional pump capacity, engineering design	2012
1056-01	LMF - WTP Engineering, Overflow and backwash Basing, East Chicago	ArcelorMittal	I, II, IV, V	Indiana	Engineering design to increase water treatment plant facility backwash basin capacity and provide additional overflow capacity in the case of emergency and maintenance.	2012
1053	LMF - WTP Engineering study of operational constraints	ArcelorMittal	I, II, IV, V	Indiana	Engineering study to review existing operating constraints on LMF and water treatment plant facility due to new pollutant discharge elimination system (NPDES). Evaluate the need for additional capacity from backwash basin and route additional piping to NPDES.	2012
1052	DOT-FHWA	Department of Transportation	II, V	Indiana	Design and Production of 10 informational modules to the LPAs for highway laws, construction, and state specific requirements.	2012
1050	BOF Caster Dryer Engineering Study	ArcelorMittal	I,II	Indiana	Provide engineering analysis for the replacement of an existing compressed air dryer. Data analysis, system testing to determine required capacities. Vendor research and comparison of existing equipment. Maintenance concerns and spare parts of current vendors being utilized by customer. Review of space requirements, new equipment envelope size and space constraints of location. Participated in vendor/customer meetings and made recommendations for purchase of equipment.	2014
1049	BOF Hood Cooling Engineering, 360 Million BTU/Hr Cooling System upgrade including fan, VFD, piping and controls Engineering and Equipment Design	ArcelorMittal	I,III,IV,V	Indiana	Fall Protection: Accessibility platforms, non-slip gratings, safety toe-plates, handrails Electrical: terminations, ANSI enclosures, and explosion proof ratings	2010

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1047	BOF - Caster Project Management	ArcelorMittal	I,III,IV,V	Indiana	Ergonomics: Assessment and impenetation design of manual-trolley around hazardous molten steel in limited confined space. Bending and turning stresses, load distribution to permit low center of gravity and prevention of flipping hazard.	2012
1046	Chlorine Monitoring	ArcelorMittal	III,IV	Indiana	Review, make recommendations and equipment selection for the customers chlorine gas hazard monitoring system. To include additional monitoring devices and communication to a central notification system and the utilities dispatch and fire department dispatch center.	2011
1044	BOF - Caster Project Management	ArcelorMittal	I, II, III	Indiana	Provide ongoing Project Management Support to the steel mill for projects related to the BOF and Caster facilities projects.	2012
1043	Chlorine PHA	ArcelorMittal	I, II, III	Indiana	Process Hazard Analysis, risk analysis. General chlorine use and risks and nine chlorine site facilities on installation review, , operations analysis, as well as locations for safety equipment and functioning equipment used to handle the chlorine	2011
1042	Chlorine P and I D	ArcelorMittal	I, II, III	Indiana	Process Safety Management to update and generate nine chlorine site facility process and instrumentation schematics as well as locations for safety equipment and functioning. Installation review, operations analysis. Liquid Chlorine used: evaporators, chlorinators, eductors, process water, solution water. Chlorine Gas used: chlorinators, eductors, process water, solution water	2011
1041	Chlorine PSM Compliance Audit	ArcelorMittal	I, II, III	Indiana	Review and update of the costumers PSM program, questionnaire and operating procedures.	2011
1040	BOF - Caster Project Management	ArcelorMittal	I, II, III	Indiana	Provide Project Management Support to the steel mill for projects related to the BOF and Caster facilities projects.	2011
1032	Storm Sewer Drainage System for BOF at Steel Mill	ArcelorMittal	I, II, III	Indiana	Provide Design Concept drawings to include sewer manholes, drain piping and perforated french drain piping to take care of constant flooding issues between the BOF and Caster facilities.	2009
Energy FAA	Energy Audit for FAA facilities - Southern Region	Federal Aviation Administration	I, II, VI	Florida, Georgia, North Carolina, Tennessee	Provide Analysis on FAA facilities for energy reduction and conservation. Recommend Energy Conservation Measures related to light occupancy changes, operation of chillers, Air Handling Unit modifications, Pump modifications. Cooling tower operations. Included potable water,, cooling water supply and recirculation and cascading use. Renewable energy systems and roof-mounted PV cell concept design.	2009

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997-05	BOF Alloy Conveyor Storage Building - Concept	ArcelorMittal	I	Indiana	New alloy conveying system for BOF. New storage building for alloy system	2012
1031	PHA Analysis Sessions for Co-Generation Plant under construction	ArcelorMittal	I	Illinois	Hazard Analysis, risk analysis, Energy usage review and reduction, new Power Plant facility design process and piping review,. Included water supply and condensate systems	2009
981	Process Safety Management Propane System Coordinator	ArcelorMittal	I, II, V, VI	Indiana	Maintenance report keeping, equipment changeovers, HAZOP Training,	2013
990-05	BOF Stack Replacement and Upgrade - Engineering detail design	ArcelorMittal	III	Indiana	New stack shell design, access platforms, ladders, Gas flow measurements, electrical and lighting, Concrete reinforcement design around base of stack	2009
USGS	DOI- US Geological Survey - LMERS - National Park Service	Department of the Interior - National Park Service	II, V	Indiana	The feasibility study for the conversion of a Visitor Center to a Claas III Lab required assessment of existing building structure, layout, access issues, utilities and outlying structures. New utilities concept design included water and wastewater systems.	2011
997	BOF Alloy Feed Conveying System - Engineering Study Design. Bin sizing, equipment specifications and Request for Proposal	ArcelorMittal	I,II,III	Indiana	Site Utilities, Equipment Layout, Furnace chutes, structural floor layout, electrical, controls, weigh belt feeders, alloy feed receipt	2008
GAF-02	GAF Materials - Engineering Construction Management	ArcelorMittal	III,IV	Indiana	Construction management services, installation and design recommendations	2007
1014	Fuel Loading Station - Engineering Services (Detailed Design)	ArcelorMittal	I,II,III	Indiana	Demolition existing truck fueling station, fuel piping, new loading ramp, new weather shelter, electrical, lighting	2007
1023	PHA Analysis Sessions for Co-Generation Plant,	ArcelorMittal	I,II,VI	Illinois	Hazard Analysis, risk analysis, Energy usage review and reduction, new Power Plant facility design process and piping review,	2007
1017	Engineering Services to provide ETRAINING for operators and maintenance personnel at LMF Water Treatment Plant	ArcelorMittal	I,II,V,VI	Indiana	Cooling towers, pumps, chemical additives, LMF operations, maintenance, backwash basins, Water Scrubbers, Cooling Water Systems, Water Sprays	2007
1016	BOF Hood Cooling Engineering, 360 Million BTU/Hr Cooling System upgrade including fan, VFD, piping and controls Study and Equipment Recommendations	ArcelorMittal	I,II	Indiana	Hood Cooling water system monitoring, heat exchanger fans, Air humidity and speed recording, BOF Furnace consumption	2007
1015	Engineering Services for Natural Gas Mixing Station to supply in the case of an emergency to Coke Oven Gas Main Pipe Line - Design and installation	ArcelorMittal	I,II,III	Indiana	Mixing station building, ventilation, Natural Gas, Coke Oven Gas, steam tracing relocation, condensate relocation	2007
1013	Engineering Study and Equipment Recommendations for Pickle Line Strip Surface Inspection System	ArcelorMittal	I,II,III	Indiana	Pickle Line existing utilities field and drawing surveys, piping modifications, equipment modifications new equipment installation	2006

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1012	Engineering Study and Recommendation for Pickle Line Fume Exhaust System Upgrade and Replacement - Environmental Controls	ArcelorMittal	I,II,III	Indiana	Pickle Line existing utilities field and drawing surveys, piping modifications, equipment installation, demolition, Water supply and recirculation systems	2006
996	Air Compressor Upgrade Engineering Study, Design and Installation	ArcelorMittal	III,IV,V,VI	Indiana	Site Utilities, Water , natural gas, sewers, foundation pad, electrical, demolition, Air Reservoir tanks, piping, silencer	2006
GAF-01	GAF piping and valve stations replacement and upgrade - Engineering study and piping installation design	ArcelorMittal	I,II,III	Indiana	piping design, new pump installation, pipe supports, steam piping, condensate piping, liquid asphalt piping	2006
990-01-02	BOF Stack Replacement and Upgrade - Study design	ArcelorMittal	I,II	Indiana	Foundation and structural assessments, current gas flume assessment, new stack reinforcement design, access platforms, ladders and stairs, Gas flow measurements	2006
989-01	BP Propylene Facility - Engineering Services	ArcelorMittal	I,II	Indiana	Tank - decompression and cleaning	2006
992	BOP PHA Gas Cleaning Engineering Study	ArcelorMittal	I,II,VI	Indiana	Duct layout, Furnaces, Water sprays, Heat analysis, Safety concerns, Maintenance recommendations	2006
976	Gas Cleaning System review for damper operations and furnace control for two-furnace operations for increased productivity	ArcelorMittal	I,II,VI	Indiana	Scrubber, Venturi, Waste Water Treatment,Electrical, HVAC, CO Detection and Suppression,	2006
966-2	Two(2) 39,000 cfm Fume Exhaust Systems for Process Line, including scrubber & fan specifications, hood & ductwork designs - Detailed Design	ArcelorMittal	I,II,III,IV,V	Indiana	Equipment Layout, Hood & Duct Design, Lifting Mechanism & Building Designs, Electrical, HVAC, Fire Detection, Fire Suppression	2005
963-01	Etraining System for Process Heater and Gas Cleaning Systems at a Sinter Plant, modules	ArcelorMittal	I,V,VI	Indiana	Process Review, Site Walkdown, Module Development	2005
960-04	2500 GPM Emergency Water System for an industrial plant, including tie-in into existing water supply, pumping & recirculation piping, pump controls & fuel oil tank conversion to water service - Detailed Design	ArcelorMittal	I,II,III,IV,V	Indiana	Emergency Water supply assessment, design of emergency system including, tank, piping	2005
984-01	Cross Country Oil Line system, 4000 ft, steam heated	ArcelorMittal	I,II,III,IV	Indiana	Flexibility, loops, control system, multiple users	2005
977-02A	New Boilerhouse Desuperheated Water Generation, including reverse osmosis skids, 1st Pass 1000 gpm, 2nd pass 100 gpm, tank, & transfer pumps, deaerator with controls & interconnecting piping - Detailed Design	ArcelorMittal	I,II,III,IV,V	Indiana	Potable water supply, High purity water supply with a second pass RO unit. Foundations, Space Utilization, Control Scheme, Piping Installation, Electrical	2005

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976-02	Engineering Services for new electrically driven, 15 HP pumps with platform & piping for a chemical loadout station - Detailed Design	ArcelorMittal	I,II,III,IV	Illinois	Structural Design, Pump Location, Light Oil Piping Design, Electrical	2005
975A	Pre Carbon Facility - Fuel Change over - COG Distribution Analysis, Suitability Review and Facility Definition for six(6) 60 MM BTU/HR Coke Oven Gas Trains.	ArcelorMittal	I, II,VI	Indiana	Coke Oven Gas Piping, Tie-In Locations, Energy Savings Evaluation, Electrical, HVAC, roof, Fire Detection, Fire Suppression	2005
978	New Boilerhouse Utility Piping, Four(4) 150,000 lb/hr of Steam at 900 psig including coke oven gas, natural gas, instrument air (IA), nitrogen (N2), potable water & service water with supports & tie-in locations - Detailed Design	ArcelorMittal	I,II,III	Indiana	Design of utilities including potable water system.	2005
976	Commissioning Services for a Light Oil Loadout Station Upgrade, including new operator panel, flowmeter & vapor recovery system	ArcelorMittal	IV,V	Illinois	Checklist Development, Operator Training, Troubleshooting, Electrical, HVAC, Fire Detection, Fire Suppression	2005
975	Engineering study that surveyed and identified savings in complex of 400,000 lb/hr of steam system with 10,000 ft of steam piping.	ArcelorMittal	I,II,VI	Indiana	Site Investigation, Survey Documentation, Report Development	2005
966-1	Two (2) 39,000 cfm Fume Exhaust System for Electr Tinning Lines, including scrubber & fan specifications, hood & ductwork designs - Conceptual Design Study	ArcelorMittal	I,II,III	Indiana	Equipment Location Scenarios, Utility Tie-In Determination, Duct Routing Selection, Electrical, HVAC, Fire Detection, Fire Suppression	2004
965-1 & 965-2	Ettraining system for Hot Strip Mill Operations & Maintenance	ArcelorMittal	V	Indiana	Module Development, Process Review,	2004
960-02	Engineering Study and evaluation of a 100,000 gpm Plant Water System, including taking and analyzing flow measurements	ArcelorMittal	I,II	Indiana	Plant Water System Walkdown, Flow Measurements, Piping Replacement	2004
959-2	New Air Compressor Facility for a Pickling Line, including 2 x 2000 cfm compressor station layout, selection, control scheme development and piping layout - Detailed Design	ArcelorMittal	III,IV	Indiana	Cooling water system design including strainers	2004



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959-1	Engineering Study for new air compressor facility at a Pickling Line, including site walkdowns, drawing research and flow measurements	ArcelorMittal	I,II	Indiana	Compressor Selection, Equipment Location Scenarios, System Evaluation	2004
960	Engineering Study and evaluation of a 110,000 GPM Cooling Water System, including system replacement scenarios & Emergency Pumping System	ArcelorMittal	I,II	Indiana	Emergency Water supply assessment, design of emergency system including, tank, piping	2004
QBOP-1	Training System update for a Q-Bop Propane System, OSHA required	ArcelorMittal	V	Indiana	Module Update	2004
970-01	Process Safety Management & Training Services for a chemical loadout station upgrade	ArcelorMittal	V	Illinois	Training Manual Development, PSM Plan Modification	2004
956-2	Chemical Loadout Station Vapor Recovery Upgrade, including vapor recovery, plc controls, utility piping & loadout platform - Detailed Design	ArcelorMittal	III	Illinois	Valve Station Design, Pipe Routing, Structural Platform Design	2004
972	Feasibility Study for a heating station roof conversion from an open loop cooling system to a closed loop cooling, 100 MM BTU/hr system	ArcelorMittal	I,II	Indiana	Envelope Determination, Existing Utility Evaluation, Calculations, Electrical, HVAC, roof, Fire Suppression	2004
948	Computer Based Training for 2000 scfm Fume Exhaust System Upgrade at a Chrome Plating Facility	ArcelorMittal	V	Indiana	Graphic Design, Module Development, Classroom Training	2003
947	Galv Line Compressed Air Knife Study	ArcelorMittal	I,II	Indiana	Process Evaluation, Piping Modifications	2003
956-1	Conceptual Study for a Chemical Loadout Station Vapor Recovery Upgrade, including location selection, tie-ins for new utilities and Control Panel Location	ArcelorMittal	I,II	Illinois	Location Options, Utility Tie-Ins, Electrical	2003
927A	Oxygen System Upgrade for a Building Including new oxygen control stations, piping, alarms & controls - Detailed Design	Veterans Affairs	I,II,III,IV	Illinois	Alarms, Power & Control Wiring, Oxygen Piping, Site Preparation, Electrical, HVAC, Fire Detection	2003
953	Engineering Study of Hood Cooling Water system for a two (2) molten 285 Ton Furnaces	ArcelorMittal	I,II	Indiana	Data Gathering & Evaluation, Report Development	2003
952	PSM Administration for a propane system at Q-BOP	ArcelorMittal	I,II,V	Indiana	Classroom Training Sessions, Audit Performance	2003
950	Drawing Revisions for power generation facility	ArcelorMittal	III	Illinois	Electronic Document Management, CAD Work	2003

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946	Chrome Plating Facility 2000 cfm Fume Exhaust Upgrade, including, ductwork design, plating solution evaporation system & storage tank design - Detailed Design	ArcelorMittal	I,II,III	Indiana	Tank Design, Pipe Mat'l Selection, Equipment Selection, Platform Design, HVAC, Electrical	2003
945	Gas Cleaning Stack Performance improvement, review and recommendations for the gas cleaning system	ArcelorMittal	I,II	Pennsylvania	Process Review, Report Development	2003
927-1,2	Chrome Line Plating Solution Temperature Control for improvement in yield and quality	ArcelorMittal	I,II,III	Indiana	Piping Design, Equipment Selection, Process Calculations	2002
922-3	Computer Based Mechanical & Electrical Training Programs for Air Compressor Facility Operation & Maintenance	ArcelorMittal	V	Indiana	Training Program Development	2002
922-2	Compressor Facility, Including Compressors (2000 cfm x 4), Dryer, Receivers (2 x 15,000 gal.), Piping Modifications & Control Systems - Detailed Design	ArcelorMittal	III,IV	Indiana	Compressors, Dryers, Receivers, Location Selection, Piping, Electrical, HVAC, Fire Suppression	2002
944	As-Built Drawing Documentation for a power generation facility	ArcelorMittal	III	Illinois	CAD Work, Drawing Management	2002