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SCOTT R. FLETCHER, M.S., P.E.

SUMMARY

Mr. Fletcher has over 17 years of experience in heavy industry with projects including custom rigging and lift structure design, structural steel design, concrete design, finite element analysis, deep foundations, and industrial equipment installations.

EDUCATION

Master of Science in Civil Engineering with an emphasis in Structural, University of Memphis, Memphis, TN

Bachelor of Science in Civil Engineering, University of Memphis, Memphis, TN

REGISTRATIONS & CERTIFICATIONS

Registered Professional Engineer in the following States:

- Arkansas # 12417
- Louisiana # PE.0036095
- Michigan # 6201050680
- Missouri # 2014038157
- North Carolina # 027685
- Oklahoma # 26631
- Tennessee # 106384
- Texas # 99075
- Washington # 44301

PROFESSIONAL ASSOCIATIONS

American Society of Civil Engineers (ASCE), Member

American Institute of Steel Construction (AISC), Member

Specialized Carriers & Rigging Association (SC&RA - via company affiliation), Member

CONTINUING EDUCATION

Courses and Certifications completed in the following areas:

- Autodesk Inventor
- AutoCAD (2D & 3D)
- RISA 3D
- RISA Section
- ALGOR
- COSMOS
- MathCAD
- Primavera Project Planner
- Microsoft Project
- Microsoft Word, Microsoft Excel
- Microsoft PowerPoint
- 3D Lift Planner

CAREER HISTORY

FORCON International – Independent Engineering Consultant

Conducting Forensic Engineering Investigations and Expert Witness Services in his fields of expertise.

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Cowles, Murphy, Glover & Assoc., Arlington, TN - Civil / Structural & Rigging Engineer, West TN Office Manager

- Qualified / Experienced Engineer in Civil, Structural, & Rigging
- Manage West Tennessee office for CMG.
- Perform professional consulting engineering services supporting various heavy industrial markets including: petrochemical, nuclear power, wind power, heavy civil, fossil power, heavy rigging / lifting, heavy transport, marine shipping, rail shipping.

Barnhart Crane & Rigging, Inc., Memphis, TN - Manager -Engineering Project Support Senior Structural Engineer

- Manage department of 10+ project engineers for corporate engineering operations. Oversee technical engineering work for over 15 remote branch project engineers.
- Structural analysis and design of lift tower systems and lifting / rigging components. Oversee shop fabrication of components.
- Heavy lift rigging analysis, component design, all types of crane layouts & operations, load bearing / spreading calculations, wind loading considerations, structural design.
- Preparation of project drawings & calculations and detailed lift / transport plans.
- Marine transport and lifting operations. Hydrostatic analyses of cargo deck barges & development of ballasting plans to achieve optimum trim and stability.
- Design of transport securements for rail, barge, and over the road shipments.
- On-site lead risk management & project management for heavy lift / transport projects involving extensive travel & field management.
- Working Knowledge of Codes / Standards: AISC Manual of Steel Construction, AWS D1.1 & D14.1 Structural Welding Codes, ANSI/ASME B30 Series Standards and BTH-1 "Design of Below-the-Hook Lifting Devices" Standard, OSHA 1926, CMAA-70, NUREG 0612 & 0554, AREA, Noble-Denton Shipping Standards, IMO Shipping Standards.

Continental Construction Co., Inc., Memphis, TN - Project Engineer

- Estimating & project management of heavy industrial construction projects.
- Structural / mechanical engineering & layout for design-build projects. Design & drafting of foundation systems, anchored bulkheads, conveyor systems, material handling systems, steel & concrete structures.

Carlson Consulting Engineers, Memphis, TN - Project Engineer

Civil engineering design, drafting, & project management for commercial developments, subdivisions, roadway projects, and hydraulic basins.

HIGHLIGHTED RIGGING & STRUCTURAL/CIVIL ENGINEERING PROJECTS

Ogin Wind Energy – Wind Turbine Headmass Upending Frame (2014-2015) – Served as consulting engineer for the structural design and detailing of fabrication drawings for a custom upending frame. The frame allows the upending of the fully dressed 73,000lb wind turbine / headmass from horizontal to vertical to speed-up installation.

Lift-Systems HHT (2014-2015) – Served as consulting engineer for the structural design of a custom hydraulic platform trailer designed to handle and transport 180 TN spent nuclear fuel casks. Performed design calculations, optimized design, and worked with Lift-Systems engineering to develop final system details.

SRT – Reactor Section Rail Securements – Texas to Montana (2014) - Served as consulting engineer for the rail securements for two reactor vessel sections weighing 283 TN and 331 TN respectively according to the AREA "Open Top Loading Rules" requirements. The larger vessel section was secured to a bolster-bolster type railcar. Custom low-profile saddles and securement system was developed for each vessel section to meet minimum rail clearances. CMG also was contracted to oversee the fabrication of all the securement components.

Ameren / Callaway Nuclear Plant – Reactor Head Replacement Project – Fulton, MO (2014) – Served as 3rd Party consulting engineer responsible for technical reviews for all transport, rigging, and load handling activities for

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both the old and new 150 TN reactor closure vessel heads (RVCHs). Critical operations reviewed included barge roll-off, hydraulic platform trailer, upending / downending of the RVCHs, heavy lift crane, & rigging.

U.S. Dept. of Energy - Hanford – 3730 Hot Cell Disposition – Richland, WA (2014) – Served as consulting engineer for the design of lifting plate fixtures and anchorage calculations to attach the lifting plates to the 3730 Hot Cell. Served as reviewing engineer for the lift plans and transport plans. Served as responsible design authority for the analysis of the existing Hot-Cell slab and lifting plate anchorage to the Hot-Cell walls. The 3730 Hot Cell, weighing 140 TN, was lifted using a heavy-lift crane and set on a Goldhofer PST/SL transporter. The 3730 Hot Cell was then transported over 30 miles to the ERDF offload site.

U.S. Dept. of Energy - Hanford – 340 Vault Disposition – Richland, WA (2014) – Served as responsible design authority & on-site risk manager (over 2 months on-site) for the 340 Vault heavy lift / transport project. The 340 Vault monolith, weighing 1,066 TN, was removed using (8) 250 TN capacity pull-up gantries and a custom beam lifting arrangement provided by Barnhart Crane & Rigging. The 340 Vault was raised up approximately 10 feet and placed on a 24-line x 4-File Goldhofer PST/SL transporter at which time the beam system became part of the transport structure. The 340 Vault was then transported over 30 miles to the ERDF offload site.

U.S. Dept. of Energy - Hanford – B309 Plutonium Reactor (PRTR) Disposition – Richland, WA (2014) – Served as responsible design authority & on-site risk manager (over 2 months on-site) for the B309 Reactor heavy lift / transport project. The B309 Reactor monolith, weighing 1,082 TN, was removed using (4) 450 TN strand jacks and a custom lifting system provided by Barnhart Crane & Rigging. The lifting system was slid over a 24-line x 4-File Goldhofer PST/SL transporter at which time the lifting system became part of the transport structure. The B309 Reactor was then transported over 30 miles to the ERDF offload site.

P&H Construction Pump Station Coffe Cell Design – Airbus Plant, Mobile, AL (2013) – Served as design engineer for 41 ft long x 21 ft wide x 26+ ft deep sheet-pile coffer cell and water system to resist lateral earth pressures.

Seattle Tunneling Partners (STP) SR99 Tunnel Boring Machine (TBM) Project – Seattle, WA (2012-2013) – Served as responsible design authority for the transport and setting into launch pit of over thirty-nine components, many weighing 500 to 1250+ metric tonnes and multiple smaller components to facilitate the assembly of the largest tunnel boring machine in the world to date with a 57.5 ft cutter-head diameter (known as “Bertha”). Spent over 3 months on-site over the span of the heavy-lifting operations. Equipment used included 96 lines of self-propelled modular transporters (SPMTs), customized modular lift tower system, multiple strand jacking systems, and specialized rigging.

BP Cherry Pt. Refinery – Blaine, WA (2012) – Served as senior reviewing engineer and risk manager for setting of 500 TN hydrotreater vessel using modular lift tower, strand jacks and CC-1800 SSL heavy-lift crane.

Grand Gulf Nuclear Station EPU Project – Port Gibson, MS (2011-2012) – Served as senior reviewing engineer for major component replacements associated with the engineered power uprate of the plant. Components included (4) 350 TN transformers, (2) 300 TN moisture-separator reheaters, (1) 400 TN generator, (9) 30 TN feedwater heaters, (1) 50 TN steam dryer, reactor feed-pump turbine equipment, and other smaller components. Equipment used included slide systems, jacking systems, custom designed lifting devices, self-propelled modular transporters, hydraulic gantries, and cranes.

U.S. Dept. of Energy - Hanford 308 TRIGA Reactor Disposition – Richland, WA (2012) – Served as responsible design authority for the lifting / rigging & transport activities for the 308 TRIGA Reactor. The 308 TRIGA Reactor, weighing 274 TN, was removed using a custom powered-roller & track system provided by Barnhart Crane & Rigging and utilized a bolt-on haunches for lifting. The 308 TRIGA Reactor was then transported on Goldhofer hydraulic platform trailers over 30 miles to the offload site at ERDF offload site.

U.S. Dept. of Energy - Hanford 309 Containment Dome & Polar Crane Disposition – Richland, WA (2011) – Served as responsible design authority for the lifting & rigging activities for the 309 Containment Building Dome and

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Polar Crane. The Containment Building Dome, weighing 62 TN; and the Polar Crane, weighing 45 TN, were removed using a Demag CC-1800 heavy-lift crawler crane in “superlift” mode provided by Barnhart Crane & Rigging.

Point Beach Nuclear Power Station – Wisconsin (2011) – Served as senior reviewing engineer for project and design engineer of a custom device for removal of feedwater heaters.

Shea-Traylor / Atlanta TBM – Atlanta, GA (2011) – Served as reviewing engineer for modular lift tower and 500 TN hoist system for retrieval of tunnel boring machine components from mining shaft.

Citgo Refinery – Lake Charles, LA (2011) – Served as design engineer and senior engineer / risk manager for jacking & translation system to lift and re-center several 500 TN coke drums in-situ.

San Vicente Dam Raise Project – Lakeside, CA (2010) – Served as reviewing engineer for the lift plans, structural models, custom attachments and rigging required to construct a cantilevered heavy-lift system atop the San Vicente Dam for the purpose of installing a 380,000lb cofferdam structure received on the upstream side of the dam. Served as risk manager for load-testing of system on-site. Project included major anchorages into downstream dam face, analysis of lifting system, use of (4) synchronized lifting strand jacks, and (1) anchorage strand jack.

U.S. Dept. of Energy - Hanford 327 Hot-Cell Disposition – Richland, WA (2010) – Served as responsible design authority for the lifting / rigging & transport activities for (10) Hot-Cells in the 327 building. The Hot-Cells were removed using a custom hydraulic gantry & track system provided by Barnhart Crane & Rigging. The Hot-Cells were then transported on Goldhofer hydraulic platform trailers over 30 miles to the offload site at ERDF using a custom-designed structural transport frame that was adjustable for each Hot-Cell.

Prairie State Energy Complex – Marissa, IL – (2009) – Served as reviewing engineer for the lift plans, structural models, and custom rigging equipment used on the project. Served as risk manager for lift and set of 450 TN+ Steam Turbine Generator (STG) using modular lift tower / stator frame technology.

Diablo Canyon Nuclear Power Plant – San Luis Obispo, CA – (2009/2010) – Served as one of the lead design engineers for the project to develop custom transport, lifting, and handling systems to support the removal and replacement of the Reactor Vessel Closure Heads (RVCHs) for both Unit 2 and Unit 1. Heavily involved in the seismic analysis / design throughout the project and development of custom solutions.

Citgo Refinery – Lemont, IL – (2009) – Served as reviewing engineer for the lift plans, structural models, and custom rigging equipment used on the project. Served as risk manager for lift and set of 1000 TN+ hydrotreater vessel using modular lift tower and modular tailing tower.

Citgo Refinery – Corpus Christi, TX – (2009) – Served as reviewing engineer for the lift plans, structural models, and custom rigging equipment used on the project. Served as risk manager for lift and set of 1000 TN+ hydrotreater vessel using modular lift tower and modular tailing tower.

Valero Refinery – Paulsboro, NJ – (2009) – Served as engineer / risk manager for lift and set 500 TN+ hydrotreater vessel using modular lift tower and self-tailing frame on modular transporters.

E.I. Hatch Nuclear – Baxley, GA (2009) - Designed custom rigging and handling solutions to remove old Unit 2 ASD units and replace with new. Served as project engineer assisting in layout and implementation as well as schedule optimization with plant.

D-Boiler Roll-On – Houston, TX (2008) – Served as design engineer and risk manager for roll-on of two 365,000lb package-style D-boilers to barge. Project involved hydraulic platform trailer operations, marine lashings / securements, structural calculations, and interface with customer and marine surveyor on-site.

Exxon-Mobil – Torrance, CA (2008) – Assisted in design and development of custom transporter and support shoring to move (2) new electrostatic precipitators weighing 2000 TN+ each over final foundations. Designed modular lift tower, rigging, and load spreading system to lift precipitators to height required for transport.

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Conoco-Phillips – Billings, MT (2008) - Designed rigging, modular lift tower, and transport configuration using modular trailers to transport and set 500 TN+ hydrotreater vessel upended using self-tailing frame on modular transporters. Served as risk manager for assembly, pre-lift, and lift operations.

Meeker Gas Plant Demethanizer Installation, Meeker, CO (2007) – Designed rigging and modular lift tower configuration to set 390 TN Demethanizer vessel.

Obayashi Tunnel Boring Machine Installation – Pittsburgh, PA (2007) – Served as senior reviewing engineer for rigging, modular lift tower, and strand jack system to install 500mt max TBM components in launch pit.

Valero Refinery – Pt. Arthur, TX (2006) – Designed rigging, 180' tall modular lift tower, and transport configuration using modular trailers to transport and set 900 TN+ hydrotreater vessel.

Valero Refinery – Pt. Arthur, TX (2006) – Designed rigging, 180' tall modular lift tower, and transport configuration using modular trailers to transport and set 300 TN+ vacuum column. Served as risk manager for assembly, pre-lift, and lift operations.

Quad Cities Nuclear Generating Station – Cordova, IL – (2005) – Designed gantry system to rig new steam dryers during assembly at GE fabrication yard several miles from site. Designed and served as risk manager for modular transporter hauling system to transport steam dryers to site. Assisted in design of custom platform to receive new 50 TN steam dryer at side of the reactor building. Developed crane layouts and rigging for setting / handling of new steam dryers. Served as shift engineer / risk manager during lift and set of steam dryers to platform and slide of steam dryers into the reactor building.

Valero Refinery – Memphis, TN (2005) - Designed rigging, modular lift tower, and transport configuration using modular trailers to transport and set 500 TN+ hydrotreater vessel upended using self-tailing frame on slide system. Served as risk manager for assembly, pre-lift, and lift operations.

Valero Refinery – Pt. Arthur, TX (2005) – Designed rigging, modular lift tower, and transport configuration using modular trailers to transport and set 600 TN+ atmospheric column. Served as risk manager for assembly and pre-lift operations.

Flint Hills Refinery – MN (2005) - Designed rigging, modular lift tower, and transport configuration using modular trailers to transport and set (2) hydrotreater reactors weighing 500 TN+.

Palisades Nuclear Plant – Covert, MI (2003, 2004, 2006, 2007, 2009, 2011) – Served as responsible design authority for custom-designed Rx Head Lift System (RHLS) to lift Rx Head for volumetric inspections (2003). Served as project engineer / risk manager on-shift overseeing rigging activities during subsequent refueling outages for construction of RHLS and Rx Head lift activities.

Hess Gas Plant – Seminole, TX (2003) – Design / analysis of 250'+ tall modular lift tower to lift and set 300 TN ERC Column. Utilized Demag CC-2000 heavy lift crane for tailing operations.