

Charles R. McCreary PE
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Charles McCreary

Professional Engineer

Professional Experience Charles McCreary has over thirty years of consulting and corporate experience in the field of computational solid and fluid mechanics. His background includes linear and non-linear stress analyses, dynamics, heat transfer, computational fluid dynamics, and software development.

Consulting Projects

Acadia Consulting, LLC Aug. 2014

Calculate the required spacing and heating air flow rate for ducts underneath a warehouse freezer in order to prevent frost heave.

Arrowhead Products Mar. 2004 - Feb. 2014

Determine the flow and temperature distribution within a drone turbine exhaust duct in order to predict the stress in the duct.

Aztec Tubular Dec. 2016

Calculate the strength and sealability of a premium threaded connection for a proposed down-hole production tubing.

Beer Wells, East Texas Sep. 2016 - Present

Evaluate structural deficiencies, recommend structural remediations.

Benoit 2001 - Present

Calculate the strength and sealability of a premium threaded connection for down-hole casing and production tubing.

C. Niel Welding Feb. 2015 - Present

Certify pressure vessel designs. Design vortex separators using CFD and particle methods.

Cirrus Associates Nov. 2017 - Aug. 2018

Structural design

Citadel Casing Aug. 2017

Calculate the geometry required to burst a pressure disc in a petalled geometry without material entering the flowstream.

Dawn VME Sep. 2007

Determine the flow and temperature distribution within an electronic enclosure in order to properly size the cooling fans.

Dryline Technology Jul. 2017

ASME BPV calculations

Ensaf Aug. 2018 - Present

Structural design

ExxonMobil URC Jun. 1994 - Present

Provide stress, thermal, and CFD services on demand.

ExxonMobil URC Nov. 2016 - Nov. 2017

Develop a hydrogen diffusion model in metals using a heat equation analogue coupled with dependence on the gradient of the hydrostatic stress.

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ExxonMobil URC Jan. 2001

Determine permafrost thaw due to produced fluid, seasonal temperature and solar radiation variation such that appropriate insulation can be specified to prevent subsidence around the well.

ExxonMobil Pipeline Jul. 2017 - Present

Calculate the natural frequencies of pipeline crossings for use in vortex induced vibration fatigue calculations.

FritoLay, NA 1994 - Present

Provide stress, thermal, and CFD services on demand.

Guardian Industries Feb. 2012 - Present

Assess structures for safety.

Keystone Engineering Feb. 2008 - Present

Wind turbine foundation fatigue analysis. Non-linear structural analysis.

Kimray Aug. 2015

Structural assessment

Lunera Lighting Mar. 2009 - Apr. 2011

Design and analysis of LED luminaires to ensure the thermal performance of the fixtures.

Oil States International June 1994 - Present

Non-linear elastomeric analyses.

Petronyx Jun. 2014 - Present

ASME BPV calculations

PolyHiSolidur May 2011 - Jul. 2011

Calculate the transient temperature profile and mold stress in a molding operation using a coupled mechanical thermal analysis to predict fatigue stress in the mold.

Profab Jun. 2018 - Present

Structural analysis of support structures.

Quarkstar Aug. 2012 - Sep. 2012

Develop an analytical approximation of required vent area for enclosures.

Quarkstar Feb. 2012 - Jun. 2015

Design and analysis of LED luminaires to ensure the thermal performance of the fixtures.

R&D Machine Oct. 2004 - Present

Stress, thermal, and CFD analyses on food processing equipment.

Scanadu Feb. 2016 - Apr. 2016

Design heat dissipation mechanisms for medical LED device.

Smith Pump Jul. 2007 - Present

Dynamic characterization of high volume pumps.

Surface Equipment Jun. 2014 - Oct. 2015

Design of a harp-type separator using CFD with kinematic particle methods.

Texas Bank and Trust Feb. 2018 - May 2018

Structural remediation design.

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Experience

1994 - present

President, CRM Engineering Services

1990 - 1994

Sr. Engineer, PDA Engineering

1987 - 1990

Sr. Engineer, Advanced Methods Group, General Dynamics FW (Lockheed-Martin)

Education

Texas A&M University

Master of Engineering, Civil Engineering

Texas A&M University

BS Civil Engineering

Publications

McCreary, C.R. and Baughn, T., "Life Comparison of Ceramic Substrates with Filled and Unfilled Vias", presented at the 1995 Japanese International Electronic Packaging Society.

McCreary, C.R. and Costin, D.P., "Finite Element Analysis of the Superplastic Forming of an Aircraft Component with Complex Geometry", pp. 1090-1105, 1990 Proceedings of the ASME Winter Annual Meeting.

James, Ray W., Carlos De la Guardia, and Charles R. McCreary Jr. "Strength of epoxy-grouted anchor bolts in concrete." *Journal of Structural Engineering* 113.12 (1987): 2365-2381.

James, Ray W., Zimmerman, R.A., and McCreary, C.R., "Effects of Overloads on Deterioration of Concrete Bridges", *Transportation Research Record* No. 1118, Transportation Research Board, Wash. D.C., 1987, pp. 65-72.