W. Robert Hicks P.E.
2018 Fall Haven Lane, Knoxville, TN 37932 865-809-5624, hicks.robby@yahoo.com

Education

Master of Engineering, Design & Manufacturing, Old Dominion University	May 2000
Bachelor of Science, Mechanical Engineering, Old Dominion University	May 1999
Associate of Science, Engineering, Thomas Nelson Community College	May 1997
Apprentice, Sheet Metal, Newport News Shipbuilding Apprentice School	Jan 1994

Experience

Senior Engineer: Fusion Science & Technology/FED/NSED **Aug 2015 – Present**
Oak Ridge National Laboratory, Oak Ridge, TN

Interim Group Leader Fusion Science & Technology Group

- Perform tasks including time charge and travel plan approval, reviewing publications in Resolution, safety walkthroughs in the group's lab spaces
- Led the EPM assessment of the group and participated in the division calibration process
- Managed the workload for the group ensuring all projects meet schedule requirements

Cost Account Manager/Lead Engineer MPEX Vacuum System

- Cost Account Manager for vacuum system design, fabrication and procurement, device assembly & systems installation and engineering installation support activities (~$17.3M)
- Lead the conceptual design of the MPEX vacuum and plasma heating systems
- Performed pumping, thermal and structural analyses for the vacuum system and supporting components using analytical and FEA (ANSYS) methods
- Documented the technical design of the vacuum system in the Conceptual Design Report.
- Developed the detailed cost estimate for both the vacuum system and device installation

Shattered Pellet Injection (SPI) Valve

- Lead the design activity for test article and coordinated the fabrication
- Performed and documented ASME Sect. VIII, Div. 2 calculations for review by SME
- Engineered and assembled cyclic test stand in close collaboration with safety personnel

Pellet Injection (PI) Flight Tubes

- Developed the detail design of the PI Flight Tubes
- Coordinated with interfacing components/systems thru IO Design Integration Office
- Performed structural analysis per ASME Sect. VIII, Div. 2, Part 5, Design by Analysis
- Documented the mechanical design and analysis (DAC) for PDR presentation at IO

Mechanical Engineer: ITER, St Paul-les-Durance, France **Aug 2013 – Aug 2015**

Thermal Shield (TS), Mechanical Engineer

- Managed analysis contract, design, documentation and procurement for VVTS Additional Neutron Shielding; completed FDR, initiated Call for Tender (~1M USD)
- Collaborate with Korean Domestic Agency to ensure manufacturing/final designs of TS Main Components meet critical IO requirements
- Act as liaison with Assembly Group, Design Integration and Magnet Division finalizing interface design and resolving assembly sequence and gap tolerance issues
- Oversee start of manufacturing of TS Main Components reviewing/approving EMRs, quality plans, manufacturing inspections plans and various procedures

Mechanical Engineer: Spallation Neutron Source, Oak Ridge, TN **May 2008 – July 2013**

Ultra Small Angle Neutron Scattering Instrument, Lead Engineer/CAM

- Developed cost book and project baseline for ~$9.5M DoE MIE
- Led project through successful CD-2/3 Lehman Reviews
- Performed CAM responsibilities: semi-annual DoE status reviews, monthly status, initiate PCRs, convey cost & schedule information to support groups and management
- Guided systems integration and design effort through rigorous design review process
- Coordinated efforts of SNS procurement and Installation groups, civil engineering firm, various vendors/laboratories (ILL), as well as support engineers and designers
- Responsible for detailed design of vacuum chambers, radiological shielding, beam shutters, optics motion control and sample positioning system

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High β Spare Cryomodule, Lead Design Engineer

- Responsible for design final documentation of vacuum vessel, elliptical heads, end-cans, cryogenic heat exchanger, primary and 50K thermal shield circuits in compliance with 10CFR-851 (Pressure Safety).
- Verify designs with structural and thermal analysis by analytical methods, FEA and ASME B&PV Code.

Mechanical Engineer: Jefferson Lab, Newport News, VA May 2000 – May 2008

12GeV Upgrade Cryomodule, Lead Design Engineer

- Responsible for final design and documentation of accelerating cavities, helium vessel, FPC waveguide, mechanical tuners, spaceframe, thermal shield, and vacuum vessel

Horizontal Test Bench - ¼ Cryomodule Test, Project/Design Engineer

- Coordinated the efforts of multiple physicists, engineers and designers for the successful HTB test of the 12GeV Upgrade cavity assembly design.
- Led the design/fabrication of SC cavities, cavity end-groups, tuners and helium vessels
- Developed a niobium to stainless steel brazing procedure for a stainless steel helium vessel eliminating explosion-bonded joints and titanium components
- Validated designs through prototypes, a pressure test fixture and bench tests

2K Superfluid Helium Heat Station, Design Engineer

- Designed a 2K superfliud helium heat station for 13kW FPC waveguide

E02-013 Neutron Detector for Experimental Hall A, Project/Design Engineer

- Responsible for all aspects of project (cost/schedule/procurement/assembly/installation)

Opto-Mechanical Beam Diagnostics, Project/Design Engineer

FEL 100kW Upgrade Low Conductivity Water System Project/Design Engineer

Sheet Metal Mechanic: Newport News Shipbuilding Mar 1991 – Aug 1997

- Fabricated and installed a variety of sheet metal components including watertight and non-watertight ventilation, bulkheads, furniture and lockers
- Experienced with shears, presses, brakes, band saws, drill presses and various hand tools. SMAW qualified

Software Experience with Word, Excel, PowerPoint, MathCAD, ANSYS, ANSYS Workbench, CREO (Pro E), SolidWorks, Microsoft Project and Primavera Contractor

Publications Primary author:

- Hicks, W. R., Daly, E., C100 Helium Vessel, Boiler & Pressure Vessel Code Documentation, JLAB-TN-07-037
- Hicks, W. R., Static Thermal Analysis for the Renascence Cryomodule HOM Feedthroughs, JLAB-TN-06-027
- Hicks, W. R., Renascence Cryomodule Helium Vessel Design Documentation, JLAB-TN-06-017
- Hicks, W. R., Daly, E., Preble, J., Wiseman, M., Rode, C., Design and Testing of a 2K Superfluid Helium Heat Station, Advances in Cryogenic Engineering
- Hicks, R., Daly, E., Design and Analysis of the Renascence Cryomodule Warm/Cold Beampipe Transitions, JLAB-TN-04-011
- Hicks, R., Daly, E., Design of a 2K Heat Station for the FEL03 13kW Waveguides, JLAB-TN-04-010
- Hicks, R., Daly, E. F., Davis, G., et. al., Analysis and Testing of the Prototype Coarse Tuner for the Renascence Cryomodule, JLAB-TN-04-003
- Hicks, R., Daly, E., Thermal Analysis of a 13 kW Waveguide for the 12GeV Upgraded Cryomodule, JLAB-TN-02-040

Contributing author:

- Chevtsov, P., Hicks, W., Denard, J-C., Synchrotron Light Interferometer at Jefferson Lab, Proceedings from the Particle Accelerator Conference, (2003).

Certifications/Licenses

Professional Engineer in the Commonwealth of Virginia (No. 0402040053);
http://www.dpor.virginia.gov/LicenseLookup/

References Available