



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at wvOASIS.gov. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at WVPurchasing.gov with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Header 1

List View

General Information | Contact | Default Values | Discount | Document Information | Clarification Request

Procurement Folder: 770845

SO Doc Code: CEO1

Procurement Type: Central Purchase Order

SO Dept: 0603

Vendor ID: VS0000032017

SO Doc ID: ADJ2100000006

Legal Name: RMF Engineering, Inc. P.C.

Published Date: 8/17/20

Alias/DBA: RMF Engineering

Close Date: 9/3/20

Total Bid: \$0.00

Close Time: 13:30

Response Date: 09/02/2020

Status: Closed

Response Time: 15:41

Solicitation Description: EO1- Buckhannon Phase II Addition-Commissioning Services

Responded By User ID: rmfengineering

Total of Header Attachments: 1

First Name: Kameron

Total of All Attachments: 1

Last Name: Ross

Email: kameron.ross@rmf.com

Phone: 4105760505



Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

**State of West Virginia
 Solicitation Response**

Proc Folder: 770845
Solicitation Description: EOI- Buckhannon Phase II Addition-Commissioning Services
Proc Type: Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2020-09-03 13:30	SR 0603 ESR09022000000001471	1

VENDOR
 VS0000032017
 RMF Engineering, Inc. P.C.

Solicitation Number: CEOI 0603 ADJ2100000006
Total Bid: 0
Response Date: 2020-09-02
Response Time: 15:41:58
Comments:

FOR INFORMATION CONTACT THE BUYER
 Tara Lyle
 (304) 558-2544
 tara.l.lyle@wv.gov

Vendor Signature X **FEIN#** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	EOI- Buckhannon Phase II Addition- Commissioning Services				0.00

Comm Code	Manufacturer	Specification	Model #
81101508			

Commodity Line Comments: EOI - no dollar amount.

Extended Description:

EOI- Buckhannon Phase II Addition- Commissioning Services per the attached documentation.



STATE OF WEST VIRGINIA
**BUCKHANNON PHASE II ADDITION
COMMISSIONING SERVICES**

SEPTEMBER 3, 2020



RMF Engineering
Reliability. Efficiency. Integrity.

5520 Research Park Drive, Suite 300
Baltimore, MD 21228

September 3, 2020

Tara Lyle
Buyer Supervisor
State of West Virginia
Department of Administration, Purchasing Division
2019 Washington Street, East
Charleston, WV 25305

RE: Buckhannon Readiness Center Phase II Addition Commissioning Services Expression of Interest

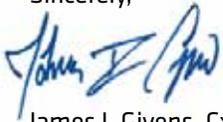
Dear Ms. Lyle and Members of the Selection Committee,

Enclosed you will find RMF Engineering, Inc. P.C.'s (RMF) technical proposal response to provide commissioning services for the referenced project. Since our inception, RMF has provided all aspects of engineering systems design, construction and commissioning of complex buildings for State and Federal clients. Our firm has over 30 years of commissioning experience with facility expansions, renovations and new construction. RMF was one of the first few firms in the country to be awarded the Certified Commissioning Firm (CCF) designation through the Building Commissioning Association (BCA).

RMF has a dedicated team of commissioning staff members, including registered Professional Engineers, Certified Commissioning Professionals, operating engineers, facility managers, TAB experts, controls specialists and LEED Accredited Professionals. Our commissioning team functions as a resource to the entire construction team, as well as an expert in the review and testing of utility and building systems to confirm they are functional and efficient.

We sincerely appreciate your consideration of RMF for this project and look forward to a successful relationship with the State of West Virginia. If you should need any additional information, please contact me at 410.576.0505 or jim.givens@rmf.com.

Sincerely,



James I. Givens, CxA, EMP
Division Manager | Field Services

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- 03** PROJECT MANAGEMENT, QUALITY & COST CONTROL
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QUALIFICATIONS & EXPERIENCE

2020
ENR
TOP 500

RMF HAS RANKED IN THE NATION'S TOP A/E DESIGN FIRMS IN ENR SINCE 2016.

2019
BD+C
TOP 25

RMF RANKED 25TH IN BD+C 2019 TOP ENGINEERING FIRMS.

2019
CSE
TOP 20

RMF RANKED 15TH OUT OF 25 IN CSE'S 2019 COMMISSIONING GIANTS.

2020
EC&M
TOP 40

RMF RANKED 26TH IN EC&M'S 2020 ELECTRICAL DESIGN FIRMS.

FIRM OVERVIEW

RMF is a 280 person consulting firm specializing in infrastructure and building systems engineering. RMF is headquartered in Baltimore, MD and maintains 11 additional production offices. Our full time staff is composed of over 80 licensed professional engineers and over 110 engineering college graduates. In our 37 year history, we have become nationally recognized for our quality analysis, planning, design, and commissioning of complex buildings, as well as campus utility generation and distribution systems.

COMMISSIONING SERVICES

For over 30 years we have been performing independent peer review and commissioning. We are a Certified Commissioning Firm with Building Commissioning Association (BCA) and maintain corporate and individual membership with the BCA and AABC Commissioning Group (ACG). Our experienced team of commissioning specialists can perform any level of commissioning services your job requires. Registered Professional Engineers, certified plant operators, certified building commissioning professionals, LEED Accredited Professionals, licensed master electricians, master plumbers and code inspectors are dedicated to RMF's commissioning team to support your commissioning needs.

FULL SERVICE ENGINEERING

Our experience is extensive. And our projects include some of the largest in the world. From simple to complex, we bring the ability to quickly understand your project's needs, the building's constraints and the future's requirements. We accomplish your goals using the most current technology and software solutions this planet has to offer. In fact, we're typically ahead of the curve in all aspects of engineering technology.

Our clients, peers, and prospects know the RMF name and rely on us to see their projects through from concept to completion. Today, our talented staff of full service engineers applies superior planning, design, engineering, and commissioning services to solve engineering challenges, large and small, for clients across the world.

Our full range of services include:



Mechanical Engineering



High Performance Design



Civil Engineering



Master Planning



Electrical Engineering



Assessment Technology



Structural Engineering



Commissioning



Controls Engineering



Energy Assessment

Our corporate commissioning goal is to provide affordable professional service that yields a project constructed and commissioned on-time, within budget and meets the complete program requirements. Our role is to facilitate the best engineering solution possible to a client's project.

We have provided commissioning services at over 75 commercial, industrial, academic, healthcare, state and federal government institutions, and over 500 individual commissioning projects. **Facilities RMF has commissioned include:**

- » Readiness Centers
- » Industrial Facilities
- » Office Buildings
- » Classrooms
- » Technology Labs
- » Science & Research Labs
- » Student Centers
- » Libraries
- » Dining Halls and Cafeterias
- » Museums/Gallery/Performance Facilities
- » Gymnasiums/Athletic/Recreation Centers
- » Convention Centers
- » Convocation Centers
- » Hospitals
- » Mission Critical Facilities
- » Residence Facilities & Dormitories
- » Airports
- » Detention Centers
- » Banks
- » Central Utility Plants

FIRM COMMISSIONING EXPERIENCE

RMF has provided expanded construction phase services to enhance the commissioning phase on hundreds of projects. RMF's role has included the complete commissioning process for healthcare, educational, government and commercial clients. RMF has been providing commissioning services for over 30 years for both building and infrastructure systems. **Our in-house professionals that support our commissioning services include:**

- » A Certified Commissioning Professional (CCP) with BCA
- » Certified Commissioning Agents & Technicians (BCA, ACG and ASHRAE)
- » LEED Accredited Professionals
- » Automated Controls Specialists
- » Certified Plant Operators
- » Licensed Master Electricians
- » Master Plumbers
- » Code Inspectors

RMF maintains corporate and individual membership with the Building Commissioning Association (BCA) and AABC Commissioning Group (ACG). Most members of our commissioning team are certified through one or both organizations.

Engineered systems must be constructed and commissioned within the project budget and satisfy all program requirements. Review of design documents, alternative systems analysis and life cycle cost justification will always be an integral part of RMF's commissioning work. The financial resources of the client must be used wisely based on sound and proven engineering concepts.

Our commissioning philosophy consists of five major goals, which are:

- » Value
- » Acceptance
- » Energy Conservation & Environmental Stewardship
- » Operation & Maintenance
- » Quality

The following pages include our recent, relevant commissioning experience.

QUALIFICATIONS & EXPERIENCE | COMMISSIONING EXPERIENCE

BUILDING COMMISSIONING REPRESENTATIVE PROJECT LIST

New Paltz Regional Office Building Re-commissioning

New York State of General Services

New Police Training Academy Commissioning

Anne Arundel County, MD

5520 Research park Drive 4th Floor Fit-Out Commissioning

Corporate Office Properties Trust / DPR Construction

Thurston Residence Hall Renovation Commissioning

The George Washington University

Commissioning Services for the Residence Hall & Bookstore

Bloomsburg University

IDIQ for Commissioning of Diplomatic Facilities Worldwide

Confidential Government Client

Commons Residence Hall Analysis / Retro-commissioning

Towson University

New South Patient Tower Commissioning - Fairfax Hospital

Inova Health System

Bear Office & Administration Building Commissioning

DelDot Statewide Support Services

Commissioning Services for Robert Poole Elementary Building Addition/ Renovation

MSA / Baltimore City Public Schools

Commissioning Services for Arundel Elementary/Middle School Replacement

MSA / Baltimore City Public Schools

Commissioning Services for Youth's Benefit Elementary School Replacement

Harford County Public Schools

Commissioning Services for Fallston High School HVAC Project

Harford County Public Schools

Commissioning Services for the Enoch Pratt Central Library Renovation

Maryland Department of General Services

Commissioning Services for Sandymount Elementary School HVAC Renovation

Carroll County Public Schools

Claude Moore Recreation Center Commissioning

Loudoun County, Virginia

Maryland State Police Barracks Commissioning

Maryland Department of General Services

Harriet Tubman Underground Railroad Visitors Center Commissioning

Maryland Department of General Services

Commissioning of the Renovation/ Addition to Dorothy I. Heights Elementary School

Baltimore City Public Schools

Commissioning of the Renovation/ Addition to the Robert Poole Building

Baltimore City Public Schools

Commissioning Services for Benfield Elementary School Renovation/ Addition

Anne Arundel County Public Schools

New Science Building Commissioning

Towson University

Salisbury Street Office Building Commissioning

State Employees Credit Union - Raleigh, NC

New Medical/Research Translation Building and New Beds and Support Tower Commissioning

State University of New York at Stony Brook

Lee Hall Complex Expansion and Renovation Commissioning

Clemson University

Fraternity Dormitories Renovations Commissioning

Clemson University

New Heart and Vascular Institute Commissioning - Fairfax Hospital

Inova Health System

Commissioning for the North Carolina Museum of Art Expansion

North Carolina Department of Cultural Resources

Commissioning Services for the New College of Liberal Arts Building and Utility Plant Addition

Towson University

Enhanced Commissioning Services for Walsh Medical Center G Wing Addition

New York State Office of General Services

Commissioning of the School of Pharmacy Addition

Notre Dame of Maryland University



» COMPLETION DATE

2020

» COST

\$32 Million

» SERVICES PROVIDED

Commissioning Services

» REFERENCE

Col. Normand Michaud
207.626.7887
normand.g.michaud.mil@
mail.mil

NEW JOINT FORCES HEADQUARTERS COMMISSIONING

STATE OF MAINE - DVEM | AUGUSTA, ME

The new Maine National Guard Joint Force Headquarters is a 100,000 SF, two-story building. The new headquarters facility is primarily an office building, housing administrative functions meant to support troops in the field, with communications, technology, planning and other logistics. The move will put, for the first time, the Army and Air National Guard headquarters staffs together in one building, making it easier for them to plan and conduct joint operations involving the approximately 2,000 Army and 1,100 Air Maine National Guard members. RMF provided commissioning for the construction phase.

Formal commissioning services performed by RMF on the following systems:

- » Variable refrigerant flow systems
- » Energy recovery units
- » Rooftop air handling units
- » Domestic water system
- » Dedicated outdoor air units
- » Mixed packaged controls
- » Building automation systems integration
- » Solar Photovoltaic (PV)
- » Electrical Power Distribution Systems
- » Lighting & Lighting Controls
- » Generator Back-Up Power System



» COMPLETION DATE

2021

» COST

\$16.6 Million

» SERVICES PROVIDED

Commissioning Services

» REFERENCE

Marc Dube
207.430.6346
marc.r.dube2.nfg@mail.
mil

NORTHERN MAINE READINESS CENTER COMMISSIONING SERVICES

STATE OF MAINE - DVEM | PRESQUE ISLE, ME

The 43,400 SF building is expected to open in early 2021 to host the Maine Army National Guard's 185th Engineer Support Company. The Maine National Guard's 185th Engineer Support Company includes about 120 members and the new center will serve as a training facility for their work in engineering and building trades provided to the Maine Army National Guard, governments and nonprofits. RMF is providing commissioning for the construction phase. The project is targeting USGBC LEED certification.

Formal commissioning services performed by RMF on the following systems:

- » Variable refrigerant flow systems
- » Energy recovery units
- » Rooftop air handling units
- » Domestic water system
- » Dedicated outdoor air units
- » Mixed packaged controls
- » Building automation systems integration
- » Solar Photovoltaic (PV)
- » Electrical Power Distribution Systems
- » Lighting & Lighting Controls
- » Generator Back-Up Power System



» COMPLETION DATE

2017

» COST

\$21 Million

» SERVICES PROVIDED

LEED-Enhanced
Commissioning Services

» REFERENCE

Christopher Elnicki
410.767.4389
chris.elnicki@maryland.
gov

HARRIET TUBMAN UNDERGROUND RAILROAD VISITOR CENTER

MD DEPARTMENT OF GENERAL SERVICES | CHURCH CREEK, MD

The new Harriet Tubman Underground Railroad Visitor Center consists of two structures, an exhibit building and an administrative building, joined by a shared entry plaza. The new complex is approximately 15,000 SF combined and contains indoor and outdoor exhibits, orientation theater, library, multipurpose room, gift shop, offices, break room, exhibit storage space, memorial garden, walking paths and picnic pavilions.

The buildings features geothermal heating and cooling, green roofs, permeable paving in parking areas and on pathways and solar-powered external lighting. The project received USGBC LEED Silver certification.

Formal commissioning services performed by RMF on all systems in the building include:

- » Air Handling Systems
- » Energy Recovery Units
- » Geothermal Systems
- » Terminal Air Components
- » Water Source Heat Pumps
- » Domestic Water Plumbing System
- » Exhaust / Control System Testing, Adjusting and Balancing Work
- » Automatic Temperature Controls
- » Plumbing Systems
- » Electrical Systems
- » Emergency Power Systems
- » Lighting Controls & Dimming Systems

QUALIFICATIONS & EXPERIENCE | RELEVANT PROJECTS



» COMPLETION DATE

2019

» COST

\$18.8 Million

» SERVICES PROVIDED

LEED-Enhanced
Commissioning Services

» REFERENCE

Joe Holoubek
410.222.7549
jholoubek@aacounty.org

POLICE TRAINING ACADEMY

ANNE ARUNDEL COUNTY | DAVIDSONVILLE, MD

The new 31,780 SF police training facility for new recruits to the Anne Arundel County Police Department, as well as personnel from the Sheriff's Office and other regional law enforcement agencies. The facility will include a 17,000 SF fitness center, dormitory, upgraded classrooms, driving and use-of-force simulators. The entry-level training program consists of seven months of intense classroom instruction, physical training and scenario based exercises. RMF provided services consistent with LEED and Enhanced Commissioning on the following systems in the building:

- » Plumbing Systems
- » Domestic Water Systems
- » Domestic Water Heating Systems
- » Process Exhaust Systems
- » General Exhaust Systems
- » Exhaust Fan
- » Destratification Fan
- » Terminal Equipment
- » General Terminal Units
- » Unit Heaters
- » Wall Unit Heaters
- » Electric Cabinet Heaters
- » Variable Refrigerant Volume Systems
- » Air Conditioning Units
- » Condensing Units
- » Dedicated Outdoor Air Units
- » Dedicated outdoor air systems
- » Heat Recovery Wheel
- » Lighting
- » Time Switches
- » Outdoor Photoelectric Switches
- » Daylight Harvesting
- » Occupancy Sensor Controls
- » LED Interior Lighting
- » Lighting Controls
- » Emergency and Exit Lighting



» **COMPLETION DATE**

2022

» **COST**

\$5 Million

» **SERVICES PROVIDED**

Enhanced Commissioning Services

» **REFERENCE**

Taylor King, PE
302.387.2228
taylor.king@delaware.gov

BEAR OFFICE & ADMINISTRATION BUILDING DELDOT STATEWIDE SUPPORT SERVICES | DOVER, DE

The original office and administration building was built in 1963 and was used for maintenance and operations administrative tasks as well as to hold public meetings and elections. With the original building becoming obsolete, the State of Delaware decided to replace the existing building with a new 24,000 SF, two-story administration building, which features 21st century design principles. The building features office space, conference rooms, a rooftop deck and a breakroom. RMF is providing formal commissioning services on the following systems and equipment:

- » Air handling Units
- » Exhaust Systems
- » Air Terminal Units
- » Heating Water Systems
- » Finned Tube Radiation
- » Elevator Sump Systems
- » Building Automation System
- » Interior Lighting and Lighting Control Systems
- » Normal Power Distribution
- » Emergency Power Distribution
- » Domestic Hot Water System



» COMPLETION DATE

2019

» COST

\$115 Million

» SERVICES PROVIDED

LEED-Enhanced
Commissioning Services

» REFERENCE

Christopher Elnicki
410.767.4389
chris.elnicki@maryland.
gov

ENOCH PRATT FREE LIBRARY MODERNIZATION MD DEPARTMENT OF GENERAL SERVICES | BALTIMORE, MD

Originally built in 1933, the 290,000 SF Enoch Pratt Central Library in downtown Baltimore underwent a massive three-year modernization program. The restoration of the library brings one of the most historic library systems in the United States into the 21st century. The library's learning environment was expanded with a new teen and young adult wing and a designated career center and also received an influx of new technology and community spaces. New MEP systems, life safety and code upgrades restore the building's infrastructure. A facade restoration and roof replacement, as well as exterior window and fixture restorations, will ensure the library continues to stand the test of time. Refurbished plaster, restored artwork and improved interior finishes further enhance the beauty of the historic structure. The building renovation has received USGBC LEED Silver certification.

RMF provided Formal commissioning services on the following systems and equipment:

- » Air handling Units
- » Humidifiers
- » Energy Recovery Ventilators
- » Exhaust Systems
- » Air Terminal Units
- » Duct Mounted Reheat Coils
- » Chilled Water Systems
- » Heating Water Systems
- » Finned Tube Radiation
- » Elevator Sump Systems
- » Building Automation System
- » Interior Lighting and Lighting Control Systems
- » Normal Power Distribution
- » Emergency Power Distribution
- » Domestic Hot Water System



» COMPLETION DATE

2023

» COST

\$20 Million

» SERVICES PROVIDED

Commissioning Services

» REFERENCE

Matt Bodt
410.333.1560
mbodt@mdstad.com

OCEAN CITY CONVENTION CENTER EXPANSION/ IMPROVEMENTS COMMISSIONING SERVICES

MSA | OCEAN CITY, MD

Maryland Stadium Authority (MSA) is engaging in the 30,000 SF expansion of the existing exhibit hall space, construction of new support space to accommodate the expansion, making improvements to existing spaces within the facility, addressing the parking needs for the expanded facility, conducting HVAC modifications including, but not limited to, conversion of existing electric resistant heating to new hot water heating, new cooling towers, air handling units, centrifugal chiller(s) and associated pumps and conducting a Life Safety Assessment in order to facilitate a building wide life safety upgrade.

RMF is providing formal commissioning services on the following systems and equipment:

- » Air Handling Units
- » Terminal Air Units
- » Hydronic Pumps
- » Condensing Boilers
- » Chillers
- » Cooling Tower
- » Exhaust Fans
- » Fan Coils Units
- » Unit Heaters
- » Domestic Water Heaters and Pumps
- » Building Automation System
- » Electrical Panel Boards
- » Receptacles
- » Lighting Control Device

QUALIFICATIONS & EXPERIENCE | RELEVANT PROJECTS



» COMPLETION DATE

2017

» COST

\$6,000,000

» SERVICES PROVIDED

Commissioning Services

» REFERENCE

Victor Stancil
919.541.2597

NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES WAREHOUSE BUILDING COMMISSIONING SERVICES

NATIONAL INSTITUTES OF HEALTH | RESEARCH TRIANGLE PARK, NC

RMF Engineering provided commissioning services for the new NIEHS Net Zero Energy Building (NZEB) Warehouse. The design build project is a 25,000 square feet, single story Warehouse in RTP, NC. USGBC LEED Version 3 (Leadership in Engineering and Environment Design) Platinum certification is targeted on this project. In addition, LEED certification for Enhanced building commissioning and Measurement and Verification was provided.

RMF developed the owner's project requirements, the design phase commissioning plan, documented the design intent, performed a focus review of design documents, completed a commissioning report, developed the commissioning plan, developed commissioning specifications for the construction documents, developed full sequences of operation, performed and provided documentation necessary to satisfy LEED Fundamental Commissioning prerequisite and performed and provided all documentation necessary to satisfy LEED Additional Commissioning Credit 3.

RMF was involved throughout the project from the pre-design into the warranty phase. The commissioning process consisted of RMF holding a scoping meeting, additional meetings to plan, scope, coordinate, schedule and review future activities and resolve problems, reviewed submittals, reviewed start-up procedures and operation and maintenance and installation manuals, developed start-up plans and start-up documentation formats, created prefunctional checklists, witnessed startup of selected equipment, developed specific equipment and system functional performance test procedures, executed performance test procedures, reviewed the O&M documentation, coordinated the training, completed a commissioning report and conducted seasonal testing and performance evaluations. RMF performed site visits, as necessary, to observe component and system installations, attended selected planning and job-site meetings to obtain information on the construction progress during the Construction and Acceptance Phase.

RMF is providing supervised seasonal testing and deficiency corrections and will return to the site 10 months into the 12 month warranty period and review with facility staff the current building operation and the condition of any outstanding issues related to the original and seasonal commissioning. RMF is also assisting in developing a preventative maintenance plan, updated master deficiency and resolution log, and providing a final end-of-warranty commissioning report.



» **COST**

\$26 Million

» **SERVICES PROVIDED**

Commissioning Services

» **REFERENCE**

Gary Maitland
(Mascaro Construction)
412.321.4901

COMMISSIONING SERVICES FOR THE NEW DEFENSE MEDICAL LOGISTICS CENTER AT FORT DETRICK

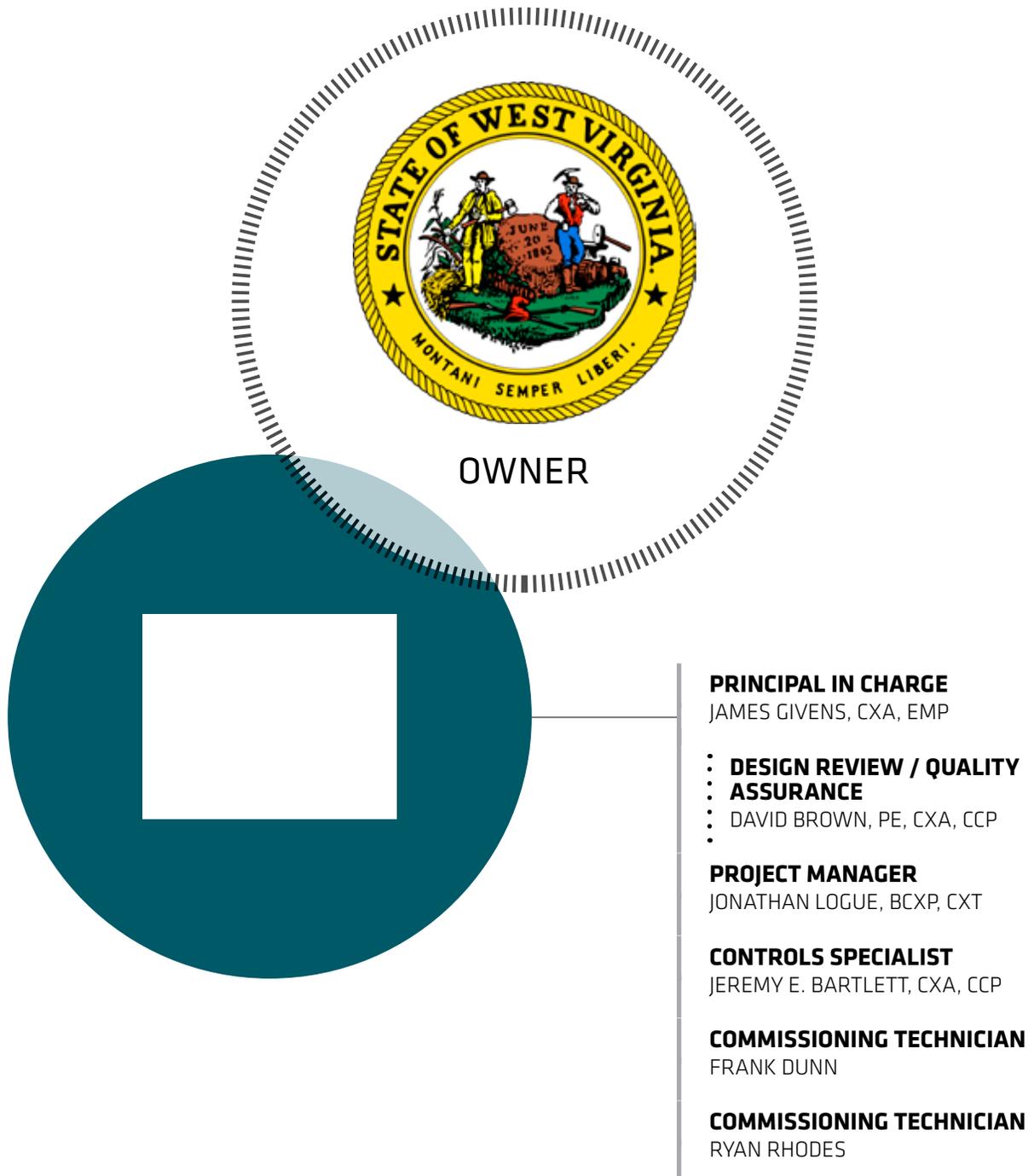
UNITED STATES ARMY CORPS OF ENGINEERS | FREDERICK, MD

The new Joint Medical Logistics Center is a 3-story 130,000 SF facility located at Ft. Detrick. The existing building on the site, Building 621, was demolished to make way for this facility, which will consolidate 9 different agencies currently housed on the campus. This Design/Build project houses the top military medical planning agencies from the Army, Navy, Air Force and Marines, and is equipped with the latest in security and intrusion detection systems, and incorporates the newest ANTI-Terrorism/Force Protection (AT/FP) requirements. The building is self-sufficient and equipped with chillers, boilers, HVAC and stand-by power systems to stand alone from the campus central utilities.

RMF was originally contracted to provide 3rd party MEP Quality Control inspection services, while maintaining the contract schedule. Impressed with the RMF inspection efforts, the Corps of Engineers requested that RMF provide full MEP Commissioning Services for the facility. The Project was designed to achieve Silver SPiRiT (LEED) certification.

QUALIFICATIONS & EXPERIENCE | PROJECT TEAM

ORGANIZATIONAL CHART





RMF ENGINEERING | PROJECT TEAM

JAMES GIVENS, CxA, EMP PRINCIPAL IN CHARGE

Mr. Givens has over 20 years of practical experience providing building construction and commissioning services for numerous renovation and new local government, educational, laboratory, healthcare, industrial, commercial and municipal facilities. Mr. Givens is currently leading RMF's Field Services Division. In addition, he maintains an active membership with several organizations within the commissioning services industry and has previously served as a Board Member for his local BCA chapter.

MEP systems integration and condition assessment is a primary area of focus for Mr. Givens. His commissioning services background and extensive field experience enable Mr. Givens to effectively evaluate system performances and provide opportunities for improvement and optimization with regard to engineered principles, energy audits and retro / re-commissioning scopes.

His commissioning experience includes large HVAC systems with both constant and variable air volume systems. He provides the functional testing of space design conditions including temperature, humidity and pressurization.

RELEVANT PROJECT EXPERIENCE

New Police Training Academy Commissioning

Anne Arundel County, MD

Harriet Tubman Underground Railroad Visitors Center Commissioning

Maryland Department of General Services

New Joint Forces Headquarters Commissioning

State Maine - DVEM

New Medical Research & Translation Building / Support Tower Commissioning

Stony Brook University

Northern Readiness Center Commissioning

State Maine - DVEM

Enoch Pratt Free Library & Offices Commissioning

Maryland Department of General Services

New Paltz Regional Office Building Commissioning

New York State Office of General Services

Thurston Residence Hall Renovation Commissioning

The George Washington University

Bear Office & Administration Building Commissioning

DelDot Statewide Support Services

South Patient Tower Commissioning

Inova Health System - Fairfax Campus

City Office Building Commissioning

City of Schenectady

IDIQ for Commissioning Services for US Government Mission in Kabul, Afghanistan

US Department of State

Residence Hall & Bookstore Commissioning

Bloomsburg University

Independent Commissioning Services

The Johns Hopkins University Applied Research Laboratory

» YEARS EXPERIENCE

With Current Firm: 22

Total: 26

» REGISTRATIONS

Certified Commissioning Authority (CxA)

Certified Energy Management Professional (EMP)

» EDUCATION

Over 25 years of technical experience in the field.

» PUBLICATIONS

"Ten Considerations for Conducting a Health Care Facility", Health Facilities Management

» REFERENCES

Myrna Mills, Contract Manager, US Department of State, 703.812.2366, millsm1@state.gov

David St. Jean, Director, Maryland Department of General Services, 410.767.4246, david.stjean1@maryland.gov



RMF ENGINEERING | PROJECT TEAM

DAVID BROWN, PE, CxA, CCP DESIGN REVIEW / QUALITY ASSURANCE

Mr. Brown has extensive experience with mechanical systems design and commissioning services. His experience includes HVAC, plumbing / fire protection and utility systems for a variety of building types. He routinely performs detailed field investigation to verify existing conditions and constructability of new work. He has written commissioning specifications, commissioning plans, installation checklists, functional testing procedures, prepared commissioning systems manuals, compiled system concept / O&M manuals and energy resource management plans. Mr. Brown routinely submits project documents and has also provided operator systems training to client staff.

» YEARS EXPERIENCE

With Current Firm: 20

Total: 23

» REGISTRATIONS

Professional Engineer

Certified Commissioning Authority (CxA)

Buildings Commissioning Professional (BCxP)

» EDUCATION

Bachelor of Science, 1993, Mechanical Engineering, University of Maryland College Park

» REFERENCES

Myrna Mills, Contract Manager, US Department of State, 703.812.2366, millsm1@state.gov

Sandra Sadler, Project Manager, US Department of Agriculture (USDA), 301.504.1204

RELEVANT PROJECT EXPERIENCE

Claude Moore Recreation Center Commissioning

Loudoun County, Virginia

Mohawk Correctional Facility Commissioning

New York State Office of General Services

Harriet Tubman Underground Railroad Visitors Center Commissioning

Maryland Department of General Services

New Fine Arts, Classroom & Athletic Facility Commissioning

Trinity Christian School

Enoch Pratt Central Library Modernization Commissioning

Maryland Department of General Services

New Joint Forces Headquarters Commissioning

State of Maine - DVEM

Clifton Mansion Renovation Commissioning

City of Baltimore

Northern Readiness Center Commissioning

State Maine - DVEM

Youth's Benefit Elementary School Commissioning

Harford County Public Schools

Commissioning Services for Fort Meade East Campus Building 2 (ECB2)

Baltimore Army Corps of Engineers

Benfield Elementary School Commissioning

Anne Arundel County Public Schools

Re-Commissioning of the Southern Horticulture Laboratory

US Department of Agriculture

New College of Humanities & Behavioral Science Facility Commissioning

Radford University

Commissioning Services for Phase 2 Chemistry Laboratory Renovations - Narragansett, RI

US Environmental Protection Agency

Maryland State Police Barracks Commissioning

Maryland Department of General Services

Commissioning of Southeastern Regional Testing and Analytics Laboratory

US Drug Enforcement Agency



RMF ENGINEERING | PROJECT TEAM

JONATHAN LOGUE, BCXP, CXT PROJECT MANAGER

Mr. Logue has provided construction phase and commissioning services for numerous renovation and new construction projects for local governments, educational, laboratory, healthcare, industrial, commercial, federal and LEED facilities.

Mr. Logue has a vast knowledge of the automated temperature controls (ATC) process and hands-on experience in the verification of the ATC work. He has excelled in performance testing and commissioning of engineered systems such as HVAC, laboratory exhaust systems, fire protection, life safety, plumbing and process systems. He routinely is tasked with the point-to-point verification and calibration of control systems, as well as functional performance testing of all building systems.

His commissioning experience includes large HVAC systems for various occupancies with both constant and variable air volume systems. He provides the functional testing of space design conditions including temperature, humidity and pressurization. Mr. Logue has also provided detailed commissioning services on hospital operating rooms, building automation systems and computer room air conditioning units.

RELEVANT PROJECT EXPERIENCE

New Joint Forces Headquarters Commissioning

State of Maine - DVEM

Renovation & Addition of Dorothy I. Heights Elementary School Commissioning

MSA / Baltimore City Public Schools

Northern Maine Readiness Center Commissioning Services

State of Maine - DVEM

New Police Training Academy Commissioning

Anne Arundel County

Claude Moore Recreation Center Commissioning

Loudoun County, Virginia

Maryland State Police Barracks Commissioning

Maryland Department of General Services

Harriet Tubman Underground Railroad Visitors Center Commissioning

Maryland Department of General Services

Northern Maine Readiness Center Commissioning

State of Maine - DVEM

Ocean City Convention Center Commissioning

Maryland Stadium Authority

New College of Humanities & Behavioral Science Facility Commissioning

Radford University

Enoch Pratt Central Library Modernization Commissioning

Maryland Department of General Services

Rockville District Courthouse Commissioning

Maryland Department of General Services

Replacement of Arundel Elementary / Middle School Commissioning

MSA / Baltimore City Public Schools

Clifton T. Perkins Maximum Security Facility Commissioning

Maryland Department of General Services

» YEARS EXPERIENCE

With Current Firm: 10

Total: 15

» REGISTRATIONS

Building Commissioning Professional (BCxP)

Certified Commissioning Technician (CxT) (Certification [REDACTED])

» EDUCATION

Over 15 years of technical experience in the field.

» REFERENCES

David St. Jean, Director, Maryland Department of General Services, 410.767.4246, david.stjean1@maryland.gov

Michael Channell, Project Manager, Harford Community College, 443.412.2654



RMF ENGINEERING | PROJECT TEAM

JEREMY E. BARTLETT, CxA, CCP CONTROLS SPECIALIST

Mr. Bartlett is a controls engineer with over 14 years of experience working with building automation systems (Automated Logic and Johnson Controls). He is experienced with new construction and renovation controls installation projects. Mr. Bartlett's experience includes controls programming and maintenance, creating functional punchlists, performing functional performance tests, troubleshooting building control systems and testing and balancing issues that arise during testing of building systems.

Mr. Bartlett has a vast knowledge of the automated temperature controls (ATC) process and hands-on experience in the verification of ATC work including the review of controls programming logic and functional operation. He has excelled in performance testing and commissioning of engineered systems such as HVAC, laboratory, fume hood, fire protection, life safety, plumbing, and process systems. He routinely is tasked with the point-to-point verification and calibration of control systems as well as the spot-checking of TAB readings.

RELEVANT PROJECT EXPERIENCE

New Joint Forces Headquarters Commissioning

State of Maine - DVEM

Enoch Pratt Free Library Renovation Commissioning

Maryland Department of General Services

Northern Maine Readiness Center Commissioning Services

State of Maine - DVEM

New College of Humanities & Behavioral Sciences Commissioning

Radford University

New Paltz Regional Office Building Re-commissioning

New York State Office of General Services

New College of Liberal Arts Building Enhanced Commissioning

Towson University

Warrensburg Regional Sub-Office Building Re-commissioning

New York State Office of General Services

New Science Facility Commissioning

Towson University

New Joint Forces Headquarters Commissioning

State of Maine - DVEM

Science Center Renovation Commissioning

Oberlin College

Northern Maine Readiness Center Commissioning Services

State of Maine - DVEM

Stewart Hall Commissioning

Shippensburg University

Residence Hall & Bookstore Commissioning

Bloomsburg University

Old Main HVAC Phase I Commissioning

Shippensburg University

New Visual Arts Building Commissioning

Franklin & Marshall College

» YEARS EXPERIENCE

With Current Firm: 7

Total: 14

» REGISTRATIONS

Certified Commissioning Professional (BCA)

Certified Commissioning Authority (ACG)

» EDUCATION

Network Administration Certification, 2002, Brick Computer Science Institute

» PUBLICATIONS

"CX & the Impact on District Energy, IDEA", Effective Building Automation Controls Integration, CxEnergy

"Existing Building Commissioning of the Oberlin College Science Center, NCBC", High-Five

» REFERENCE

Meghan Riesterer, Assistant VP of Energy Management & Sustainability, Oberlin College, 440.775.5663, megan.riesterer@oberlin.edu



RMF ENGINEERING | PROJECT TEAM

FRANK DUNN COMMISSIONING TECHNICIAN

Mr. Dunn serves on RMF's inspection and construction team. His responsibilities as a construction manager consist of construction administration and power plant inspections. Mr. Dunn has over 30 years of experience in industrial power plants, inclusive of on-site construction, construction administration, surveys, inspections, evaluations and boiler assessments. His inspection allows him to uncover defects and deterioration of systems that are often overlooked by others during routine evaluations.

» YEARS EXPERIENCE

With Current Firm: 15

Total: 31

» REGISTRATIONS

OSHA Authorized Construction Trainer - [REDACTED]

NDE Level II Visual Weld Inspector

Delaware Skills Center – Certified Industrial Pipefitting - Pipefitting of exotic and non-exotic metals from 1/2" to 48"

Hydrostatic and Pneumatic Testing of Mechanical Piping Systems

Radiological Worker Level II

Second Grade Stationary Engineer License

» PUBLICATIONS

"Avoiding OSHA Issues: Implement a Sound Safety Plan", FacilitiesNet, 2016

» REFERENCES

Bill Lake, Maryland Department of General Services, 410.251.8256, bill.lake@maryland.gov

RELEVANT PROJECT EXPERIENCE

Northern Readiness Center Commissioning
State Maine - DVEM

Mohawk Correctional & Walsh Medical Building Renovation Commissioning

New York State Office of General Services
Clifton T. Perkins Maximum Security Commissioning

Maryland Department of General Services
Finan Center Psychiatric Hospital Energy Performance Assessment

Maryland Department of General Services
Hospital Modernization Commissioning Services

Eastern Maine Medical Center
Heating Plant Renovation Commissioning Services

Sing Sing Correctional Facility
New Maryland State Police Barracks Commissioning Services

Maryland Department of General Services
Harriet Tubman Underground Railroad State Park Visitors Center

Commissioning Services
Maryland Department of General Services

New Heart & Vascular Institute and Utility Plant Commissioning Services at Fairfax Medical Campus
Inova Health System

Mt. Vernon Hospital Chiller Plant Upgrades
Inova Health System

New Women's & Children's Hospital and Utility Plant at Fairfax Medical Campus
Inova Health System

Translational Medicine Research Lab - Claude Moore Health Education Center at Fairfax Medical Campus
Inova Health System

Mt. Vernon Hospital AHU Replacement Commissioning Services
Inova Health System

Pacific Regional Laboratory Commissioning Services
US Food and Drug Administration

New Science Technology Building Commissioning Services
State University of New York at Fredonia



RMF ENGINEERING | PROJECT TEAM

RYAN RHODES COMMISSIONING TECHNICIAN

As a commissioning technician, Mr. Rhodes has a wide breadth of experience in RMF's field department. He has accumulated an immense amount of hands-on experience in the installation and verification of the ATC systems, testing, adjusting and balancing (TAB) protocol, and data-logging and assessing systems during survey efforts required for energy audits.

His commissioning experience includes large HVAC systems that utilize DDC and/or Pneumatic controls. He has gained valued knowledge on the use of specialty testing equipment such as Ultrasonic Flow Meters, Dataloggers, Flow Hoods, and Water Flow/Pressure Meters.

» YEARS EXPERIENCE

With Current Firm: 8

Total: 8

» EDUCATION

Bachelor of Science, 2014, Industrial Engineering, North Carolina A&T State University

» REFERENCE

COL. Normand Michaud, State of Maine - DVEM, 207.626.7887, normand.g.michaud.mil@mail.mil

RELEVANT PROJECT EXPERIENCE

Harriet Tubman Underground Railroad Visitors Center Commissioning
Maryland Department of General Services

Enoch Pratt Central Library & Office Modernization Commissioning
Maryland Department of General Services

Clifton Mansion Renovation Commissioning
City of Baltimore

Benfield Elementary School Modernization Commissioning
Anne Arundel County Public Schools

New Joint Forces Headquarters Commissioning
State of Maine - DVEM

Northern Maine Readiness Center Commissioning Services
State of Maine - DVEM

Corcoran School of Arts Renovation Commissioning
The George Washington University

New College of Humanities & Behavioral Science Facility Commissioning
Radford University

Science Complex Commissioning
Towson University

Science Center Renovation Commissioning
Oberlin College

Walsh Regional Medical Unit Addition Commissioning
New York State Office of General Services

Warrensburg Regional Sub-Office Building Re-commissioning
New York State Office of General Services

Science Technology Building Commissioning
State University of New York at Fredonia

Independent Commissioning Services
The Johns Hopkins University Applied Research Laboratory

New Police Training Academy Commissioning
Anne Arundel County

Maryland State Police Barracks Commissioning
Maryland Department of General Services

2

APPROACH & METHODOLOGY



COMMISSIONING PROCESS & IMPLEMENTATION

RMF uses a commissioning process closely modeled after industry standards such as ACG, BCA and ASHRAE. The primary goal of the process is to deliver a client's project on time, with energy efficient operational systems that satisfy the designer's intent and meet the owner's program requirements. It is understood that the commissioning process must be flexible to meet the ever changing needs inherent in technologically complex systems. The commissioning plan is refined to respond to evolving, project specific requirements as the owner's program is being developed, as the project moves through the design phase and during the construction phase.

RMF's role in providing third-party commissioning is outlined within this qualifications package.

A. PROGRAM PHASE

The commissioning process ideally begins with the program phase and should begin as close to project inception as possible. Design criteria gathered and established in this phase will be used to develop the system design and enable evaluation of system performance.

RMF will assist in developing/reviewing an Owner's Project Requirements (OPR) document to outline the overall vision for the facility and expectations of how it will be used and operated. The OPR will contain known goals and objectives, important criteria, costs and other limitations. The program may include building utilization, user needs, occupancy requirements, type of building construction, system functions, as well as energy, air quality and environmental performance criteria. The OPR will capture the project vision and it will contain all requirements important to enable the development of the initial Design Intent document and Commissioning Plan. The key to an effective commissioning process is quality information and criteria provided up front in the owner's program.

RMF ENGINEERING | APPROACH & METHODOLOGY

Operations and maintenance (O&M) personnel will be identified at this time and they will be encouraged to lend their practical knowledge, to ensure that important O&M issues are considered in the development of the system designs and the commissioning process.

BASIS OF DESIGN

The Basis of Design (BOD) should be consistent with, performance criteria established in the OPR. The BOD will include the specific requirements for each occupancy, activity and / or physical area of the proposed facility with specific reference to industry standards, local building codes and environmental quality objectives. Since the OPR may be revised and changes accepted as design concepts develop, the Basis of Design will be reviewed with regard to these changes and updated as needed. The final version of the OPR and the BOD may be included in the contract documents, because of their importance in clarifying the scope of work for contractors.

COMMISSIONING PLAN

The Commissioning Plan is a document, or group of documents, that defines the commissioning process at the various stages of project development. It is flexible, continually evolves and is expanded as the design and construction of the systems progresses. The commissioning agent typically prepares this document. RMF's role would be to prepare the plan in accordance with the OPR and the Design Intent documents and to update ongoing refinements of the design – to ensure that they are reflected in the plan. We believe that our experience in similar projects (as both designers and commissioning agents) helps to create a superior plan. As the design concepts are being developed from the initial Design Intent, a preliminary Commissioning Plan is developed that outlines the process required to commission the systems. This plan will define the extent of the commissioning process and communicate it to all team participants. It must include the scope of the process, the time required for completion and staff training requirements.

Potential members of the commissioning team are identified in the preliminary Commissioning Plan. The team will include the owner, commissioning agent, design professionals, operation and maintenance staff, contractors, vendors and other specialists deemed appropriate for the complexity of the project.

The Commissioning Plan will be updated, to define the on-site activities required for implementing the commissioning specifications. The plan must be project-specific and reflect the actual equipment that will be installed. The Commissioning Plan will:

- » Detail the schedule of inspections during construction
- » Develop the schedule for verification and functional performance tests
- » Define the process for reporting and correcting any deficiencies identified
- » Detail any training sessions for operations and maintenance personnel that are to take place

B. DESIGN PHASE

The design phase includes progressive reviews of design documents (SD, DD, CDs, etc.). The documents will be examined for completeness and adherence to performance standards and regulatory requirements. Plans will be reviewed for completeness and constructability with specific emphasis on phasing, delivery of materials, etc. Calculations and cost estimates will be challenged. The key objectives of the commissioning process during the design phase are to:

- » Verify design complies with OPR
- » Continue the development of the Commissioning Plan
- » Develop the commissioning specifications
- » Review and accept contract documents for compliance with the BOD and the OPR documents
- » Coordinate architectural, mechanical, electrical, fire safety, and life-safety layout, equipment and systems
- » Ensure system alternatives are considered with respect to function and cost



Changes to the initial OPR occurring during the design phase are documented by RMF, and are reviewed and approved with the owner. During the design phase, the approved preliminary Commissioning Plan is expanded to detail the activities of all participants involved in the commissioning process. It must define the scope of work, the roles and responsibilities of each participant, the organization, staffing, and scheduling of the process, while providing sufficient detail to guide the preparation of the commissioning specification.

The commissioning specifications will be developed as part of the project technical specifications, to contractually implement the post-design phases of the process. The commissioning specification provides a detailed description of the scope and objective of the commissioning process during the construction, acceptance, and post-acceptance phases of a project. It must specify the scope of work, roles, responsibilities, and requirements of each commissioning team member. RMF would prepare this specification as part of the technical contract specifications, with review and input from the designer and owner. Specific commissioning specifications will be tailored to the individual work packages.

The commissioning specifications will detail the acceptance phase procedures for verification and functional performance testing, as well as other required acceptance phase procedures. It must include a list of equipment and systems to be evaluated, along with checklist formats and sample test forms to clarify requirements. These forms are intended to be furnished by RMF.

The scope of work in the commissioning specification will identify the required skills and qualifications of the commissioning team, including operation and maintenance personnel. It will include a section for each trade involved in the construction of the building systems, detailing their scope of work in the process.



C. CONSTRUCTION PHASE

The objectives of the commissioning process during the construction phase are listed below:

- » Review submittals for constructability and compliance with contract documents
- » Finalize details of the Commissioning Plan
- » Schedule and conduct periodic commissioning team meetings
- » Observe construction, installation, start-up, operation and testing & balancing
- » Conduct O&M training

CONSTRUCTION PHASE PROCEDURES

During the construction phase, the following activities shall be performed:

- » Review design changes to ensure compliance
- » Review submittals
- » Detail the Commissioning Plan
- » Create project-specific procedures and checklists
- » Make necessary observations and inspections





- » Update documentation
- » Report progress and deficiencies to all parties involved; maintain an Issues Log
- » Conduct prefunctional tests
- » Coordinate and implement training of O&M personnel

The training program for operations and maintenance personnel will be coordinated with the appropriate participants, led by RMF's qualified personnel. RMF, as the commissioning agent will observe and document all start-up, testing-adjusting-balancing and calibration activities. Controls testing and calibration will begin concurrent with and be completed prior to, the completion of the testing, adjusting and balancing work.

Functional performance testing will include tests of individual components of the central equipment and systems. "Dynamic Testing" of these systems will be performed to challenge the system against the intended operation. The primary goal of dynamic testing is to demonstrate how systems will function during real world conditions not just strategic operation. As each individual check or test is accomplished, physical responses of the system will be observed and compared to the specified requirements in order to verify the test results. During functional performance testing of the MEP systems, a failure in performance of a part of the system or of a component may be revealed. Any performance deficiencies must be evaluated to determine the cause and whether they are part of the contractual obligations. After necessary corrective measures are completed, repeat the necessary functional performance tests. A functional performance testing report will be prepared and submitted to the design professional. Deviations in performance from contract documents or design intent should be recorded, with a description and analysis included.

D. ACCEPTANCE PHASE

During the acceptance phase of the commissioning process, verification, functional performance tests and other acceptance procedures will take place. RMF will be present for systems' functional performance tests and on critical equipment checks and tests. The objectives are to:

- » Verify the accuracy of the final TAB report
- » Verify the systems, as installed, comply with the contract documents
- » Establish an as-built record of the systems' performance
- » Verify the as-built records
- » Complete the commissioning report & Complete the Systems Manual
- » Turn over the facility operation to the owner

At the end of the acceptance procedures, the system will have been proven and documented to be operational and performing in accordance with the contract documents, including all normal operational modes and abnormal or emergency conditions. While the bulk of the effort will fall to RMF as the commissioning agent during this period, it is recommended that the designers be present and provide input at the critical stages, including the functional performance tests of the main energy production and distribution systems.



This will aid in completing the testing in a timely manner, providing immediate feedback in some cases, should questions arise during the work.

Theory of operation:

- » Basic concept
- » Energy efficiency
- » Seasonal modes of operation
- » Emergency conditions and procedures
- » Types of systems
- » System operations
- » Operating parameters

Use of control system:

- » Sequence of operation
- » Problem indicators
- » Diagnostics
- » Corrective actions
- » Modification procedures
- » Use of reports and historian
- » Service, maintenance, diagnostics and repair

E. POST ACCEPTANCE PHASE

Post-acceptance commissioning is the continued adjustment, optimization and modification of the plant, utilities and building systems to meet specified requirements. It includes updating documentation to reflect minor adjustments, system maintenance and calibration, major system modifications and provisions for ongoing training of operations and maintenance personnel. The objective of post-acceptance commissioning is to maintain the performance of the systems throughout the useful life of the facility. RMF will offer recommendations for this work, as part of the Final Commissioning Report.

PROPOSED SCHEDULING

Commissioning is most successful when it is integrated early in the design phase of the project. Starting the process early allows the commissioning agent the appropriate time to review and comment on the design phase activities, as well as prepare detailed specifications and a commissioning plan for inclusion in the contract documents. Clearly defining the roles and responsibilities of all team members prior to bidding lays the groundwork for a seamless commissioning process into the construction phase.

When the construction has started, the commissioning agent will conduct an initial meeting to present the commissioning plan to all team members. During this meeting, the preliminary commissioning schedule will be presented as well as the process and procedures for commissioning. The commissioning specialist will become fully integrated into the construction process to help review and resolve issues and expedite time sensitive documents. It is critical that the commissioning specialist continually challenge the work completion and systems and equipment start-up because frequently, commissioning is left as a lower priority by the prime contractors. The commissioning agent provides an independent team to focus solely on checking out systems and equipment; therefore, guaranteeing the safe and appropriate operation of systems at the required time for building occupancy.

An early task in the construction project will be the integration of the commissioning schedule. The process includes a scheduling coordination meeting which functions as follows:

- » All contractors assemble for a meeting
- » Each contractor is assigned a different sticky note color
- » All milestones are placed on the blank schedule
- » Each contractor is responsible for placing their milestones on the schedule which typically covers an entire office wall
- » The meeting is spent re-arranging these steps until all contractors are satisfied with the order and duration of events indicating a true project schedule including all commissioning activities
- » The scheduling “card-trick” provides the following key benefits to the team:
 - » Realistic Sub-Contractor Schedule Integration
 - » Demonstrates Dependent Tasks
 - » Identifies Scheduling Conflicts

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» Living Schedule Revisited to Show Actual Finish Line

RMF also has a web-based design review/commissioning issues log tool that is utilized to manage the communication process. The process allows the Owner, Design Professionals and Contractors to quickly review the status of issues and the historical responses/actions supporting these issues. On a monthly basis, RMF provides formal progress reports for commissioning activities along with a four week “Look Ahead” schedule.

IMPLEMENTATION & RECOMMENDED MEETINGS

In the interest of simplicity, efficiency and continuity for both the State of West Virginia and RMF, we have consolidated all necessary phase efforts in our Commissioning Services proposal and fee structure. As a professional Commissioning Services provider, our main objective is to fulfill the entire scope of work for this project in the best interest of you as the owner; which we feel is appropriately handled as a single proposed effort.

As for meeting attendance and frequency, monthly meetings are a solid base for planning purposes. We typically recommend that the CxA attend regular project meetings on a monthly basis and integrate commissioning elements thereto. Additionally, as work progresses, specific commissioning-focused meetings will be required – monthly to start and then progressing to bi-weekly meetings as the MEP work progresses and commissioning activities become more integrated.

FOSTERING TEAMWORK FOR SUCCESSFUL PROJECT COMPLETION

The best method to foster teamwork and cooperation from other entities is to make the commissioning process “painless” and transparent. Providing positive technical contribution to the design intent, basis of design and document review can be extremely helpful. When feasible, RMF provides technical drafts of written materials, desired details, drawing notes, phasing sequences and even expanded temperature control sequences. We will use our commissioning, engineering, construction and O&M experience to improve relevant aspects of the construction documents.

As the commissioning agent, we demonstrate clear leadership in all phases of commissioning. We will drive and be responsible for, the ultimate production of all required commissioning materials.



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PROJECT MANAGEMENT, QUALITY & COST CONTROL

RMF ENGINEERING | PROJECT MANAGEMENT, QUALITY & COST CONTROL

COMMISSIONING QUALITY CONTROL

01 Commissioning Project Quality Control Review. In RMF's field services division we implement our quality control (QC) process on every project we take on. The division manager's primary role on a project is financial management, overall team coordination and client services.

When we start a new project, our division manager selects a primary Commissioning (Cx) agent as the project manager for the project's Cx process.

The Cx project manager (Cx PM) will be the primary contact for all Cx items related to the project. The Cx PM completes a detailed scope review to fully understand the project requirements and sets the project up in our Cx software platform. The Cx PM then meets with the client to review our project understanding. The next step is to interface with the design team and integrate to the design review process. During the design review process the Cx engineer performs the reviews while the PM interfaces with the team and coordinates the schedule. After completion of the design phase the submittal review process is conducted in a very similar manner. The Cx specialist and or engineer's complete submittal reviews concurrently with the design team and the Cx PM interfaces and coordinates with the team.

02 Commissioning Documentation Development Quality Control Review. All the Cx project documentation is developed following Cx industry standards as defined by ACG, ASHRAE, BCA, and LEED as required. At this stage the Cx technicians produce the Prefunctional checklists (PFCs) using the approved submittal data and contract documents. Once completed, the Cx Specialists reviews and approves the PFCs and then creates the Functional Performance Tests (FPTs). The FPTs are developed based on the contract documents equipment sequence of operations and approved HVAC controls system submittal. All the FPTs are reviewed and approved by the Cx PM prior to submission to the owner and design team.

Throughout the project documentation for site visits, meeting minutes, issues logs will all be produced by the Cx technician and Cx specialists. All this documentation is managed by our Cx software and reviewed by the Cx PM.

03 Commissioning Process Quality Control Review. During the project the Cx PM will interface with all project team members integrating the Cx process within the construction process. Various tasks such as PFC verification, equipment start-up observation, functional performance testing and training verification will be scheduled by the Cx PM and performed by the Cx Specialists and Technician. All documentation produced from these efforts will be reviewed by the Cx PM prior to issuance to the team. As we strive for open communication and transparency all of this documentation will be visible to the Cx team at all times of our Cx software management tool (Facility Grid).

04 Commissioning Record And Quality Control. At project completion the Cx PM and Cx specialist will develop a Cx report which will include all the Cx project documentation compiled as a complete record of the process to the client. The report will be reviewed and approved by the Cx PM prior to issuance to the client.

PROJECT MANAGEMENT PLAN & TEAM ORGANIZATION

Clear and continuous communication between commissioning team members is the key to coordination on any project. The project manager must insure daily communication between RMF, the client and other consultant team members by telephone, facsimile, E-mail and in person. RMF's commissioning teams are seated adjacent to each other on a continuous basis for all projects. Teamwork and continuous communication is easily obtained in-house because of the long term working relationship of our employees. Typically the teams will have 10+ years of experience working together. Key decision correspondence will come through RMF's office for continuity and coordination so that items do not "fall through the cracks." The team's personnel routinely utilize several different communication media to aid in the management and execution of projects. They include letters, trip reports, meeting minutes, telephone conversations, and telephone conversation reports.

Regular project reporting is crucial for in-house coordination. When projects become larger or have multiple bid packages, team members need a regular update on deadlines, deliverable requirements and potential construction phase issues. RMF utilizes monthly status reports for multi-phase projects to keep the design team and client informed of RMF's understanding of current issues. The status report benefits the entire project team because it is a tool to disseminate information. Everyone will know RMF's interpretation of the current state of affairs. The status reports include the following data for each individual phase or work order:

» Project Phase No. and Title

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- » Current Status and % Complete
- » RMF Personnel Assigned
- » Next Deliverable and Anticipated Date of Completion
- » List of Information Required
- » Conflicts or Hold Items Relevant to the Phase
- » Decisions and Conclusions Reached
- » **Remarks–RMF's Understanding of the Current State of the Phase or Work Order**

COST CONTROL

Financial controls will be monitored continually. We will hold meetings with the RMF Project Manager and team as required to review program schedules and compare budgeted man-hours and dollars with expenditures.

This will permit the RMF Project Manager to closely monitor costs for the project and to ensure that all costs stay within budget. Progress reports are typically submitted for each calendar month. This presentation will be supported by a schedule and narrative comprehensive enough to enable the management personnel to evaluate the man-hour efforts to render the services cited. The report will address the purpose of the assignment and briefly describe how the objectives sought were obtained. The monthly invoices for services rendered will cover the same time period as the progress report.

4

ATTACHMENTS

RMF ENGINEERING | EMPLOYEE CERTIFICATIONS AND REGISTRATIONS

JAMES I. GIVENS, CxA, EMP



hereby certifies that

James I. Givens
RMF Engineering, Inc.

has met all prerequisites demonstrating independence and the technical, management, and communications skills required to implement the commissioning process in new and existing buildings, and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG

Certified Commissioning Authority

This certificate, valid only for the year 2020, is renewable on an annual basis upon meeting all requirements noted in the CxA Candidate Handbook.



James I. Givens, PE., CxA
Certification Council Chair

Ray Bert
ACG Executive Director

This certificate is the sole property of ACG and must be returned upon request.



ENERGY MANAGEMENT ASSOCIATION

hereby certifies that

James Givens
RMF Engineering, Inc.

has demonstrated the technical, managerial, financial, and communications knowledge required to plan and implement energy management, and passed the necessary examination to be awarded this certificate in recognition of his qualifications as an EMA

Energy Management Professional (EMP)

This registration number [redacted] and this certificate, valid only for the year 2020, are renewable on an annual basis upon meeting all requirements for maintaining EMP certification.



Gretchen Coleman
Gretchen Coleman, EMP, Certification Council Chair

Edward L. Armstrong
Edward L. Armstrong, Executive Director

This certificate is the sole property of EMA and must be returned upon request.

JONATHAN H. LOGUE, BCxP, CxT



Building Commissioning Professional (BCxP)

ISSUED TO
Jonathan Logue



Issued on: 22 NOV 2019 | Expires on: 31 DEC 2022 | Issued by: ASHRAE
Verify: <https://www.youracclaim.com/go/HrqQ4Mtc>



hereby certifies that

Jonathan H. Logue
RMF Engineering Inc.

has demonstrated the requisite knowledge and understanding of the building commissioning process as presented in the ACG Commissioning Guideline and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG

Certified Commissioning Technician

This registration number [redacted] and this certificate, valid only for the year 2020, are renewable on an annual basis after examination of the agency's record for the preceding year.



James I. Givens, PE., CxA
Certification Council Chair

Ray Bert
Ray Bert, Executive Director

RMF ENGINEERING | EMPLOYEE CERTIFICATIONS AND REGISTRATIONS

DAVID C. BROWN, PE, CxA, BCXP



hereby certifies that

David Brown
RMF Engineering, Inc.

has met all prerequisites demonstrating independence and the technical, management, and communications skills required to implement the commissioning process in new and existing buildings, and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG

Certified Commissioning Authority

Registration number: [REDACTED]. This certificate, valid only for the year 2020, is renewable on an annual basis upon meeting all requirements noted in the CxA Candidate Handbook.



Justin E. Gattuso
Justin E. Gattuso, PE, CxA
Certification Council Chair



Ray Bost
Ray Bost
ACG Executive Director

This certificate is valid only in projects in ACG and must be renewed in subsequent years.

23 05 45521 DAVID C BROWN 6322 05-17-2020
MESSAGE(S):
JUST A REMINDER. EFFECTIVE 1/15/2018 THE NUMBER OF REQUIRED PDH'S HAS BEEN REDUCED FROM 24 TO 16. ALSO THERE IS NO CATEGORY A OR B.

TECHNICAL, RESEARCH, ANALYTICAL, OR DESIGN ASPECTS OF ENGINEERING; LAWS AND REGULATIONS APPLICABLE TO THE PRACTICE OF ENGINEERING IN MARYLAND; ENGINEERING-RELATED COMPUTER HARDWARE AND SOFTWARE TOPICS; STANDARDS OF PRACTICE OR CARE; PROFESSIONAL ENGINEERING ETHICS; PROJECT MANAGEMENT, RISK ASSESSMENT AND MANAGEMENT, OR EMERGENCY AND DISASTER MANAGEMENT; OR SIMILAR TOPICS AIMED TO MAINTAIN, IMPROVE, OR EXPAND THE SKILLS AND KNOWLEDGE RELEVANT TO THE LICENSEES FIELD.

A MINIMUM OF 1 PDH IN EACH BIENNIAL LICENSING TERM SHALL BE EARNED FROM THE PARTICIPATION IN THE COMPLETION OF QUALIFYING PROGRAMS WITH CONTENT RELATED TO THE FOLLOWING: ETHICAL CONCERNS AND CONFLICTS RELATED TO ENGINEERING FAMILIARITY WITH CODE OF CONDUCT, STANDARDS OF PRACTICE OR MARYLAND LAW

Maryland DEPARTMENT OF LABOR
STATE OF MARYLAND MARYLAND DEPARTMENT OF LABOR
STATE BOARD FOR PROFESSIONAL ENGINEERS
CERTIFIES THAT: DAVID C BROWN
IS AN AUTHORIZED: 05 - PROFESSIONAL ENGINEER
EXPIRATION: 06-05-2022 EFFECTIVE: N/A
Signature of Boarder: [REDACTED] Secretary: *Tiffany P. Robinson*

JEREMY E. BARTLETT, CxA, CCP



hereby certifies that

Jeremy Bartlett
RMF Engineering, Inc.

has met all prerequisites demonstrating independence and the technical, management, and communications skills required to implement the commissioning process in new and existing buildings, and passed the necessary examination to be awarded this certificate in recognition of their qualifications as an ACG

Certified Commissioning Authority

Registration number: [REDACTED]. This certificate, valid only for the year 2020, is renewable on an annual basis upon meeting all requirements noted in the CxA Candidate Handbook.



Justin E. Gattuso
Justin E. Gattuso, PE, CxA
Certification Council Chair



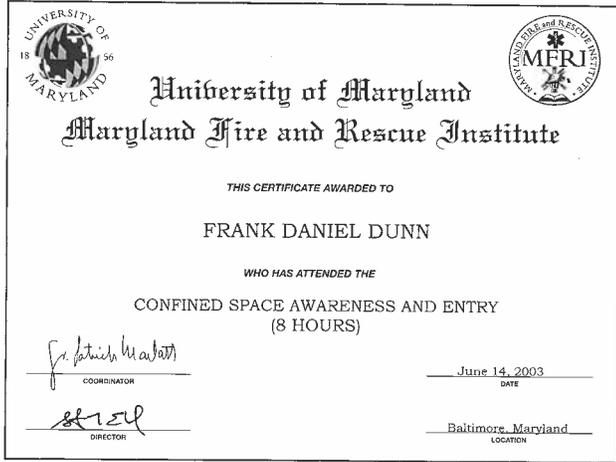
Ray Bost
Ray Bost
ACG Executive Director

This certificate is valid only in projects in ACG and must be renewed in subsequent years.

Building Commissioning Certification Board
CONFERRED UPON
Jeremy Edward Bartlett
THE DESIGNATION OF
Certified Commissioning Professional (CCP)
The BCCB is accredited by ANSI to the ANSI/ISO/IEC 17024:2012 standard. Registration number: [REDACTED]
FOR DEMONSTRATING A HIGH LEVEL OF COMPETENCE AND EXPERIENCE FOR THE BUILDING COMMISSIONING PROCESS BY SUCCESSFULLY COMPLETING AN EXAMINATION, DOCUMENTING PROFESSIONAL AND EDUCATION ACHIEVEMENTS AND FULFILLING PRESCRIBED STANDARDS OF PERFORMANCE AND CONDUCT REQUIRED FOR CCP.
Stephen R. [REDACTED] PRESIDENT
Stephen R. [REDACTED] CERTIFICATION DIRECTOR
EXPIRES ON 8/31/2021
CCP #609
Logos: BCCB, ANSI, Better Buildings, CCP

RMF ENGINEERING | EMPLOYEE CERTIFICATIONS AND REGISTRATIONS

FRANK DUNN





RMF Engineering

Reliability. Efficiency. Integrity.