CPV TOWANTIC ENERGY CENTER

October 16, 2017

VIA EMAIL AND FIRST CLASS MAIL

Ms. Melanie Bachman
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT. 06051

Re: DOCKET 192B – CPV Towantic LLC; CSC Decision and Order Condition 1(f) – Fifteen (15) Day Pipeline/System Cleaning Operation Notification

Dear Ms. Bachman:

In accordance with Condition 1(f) in the Connecticut Siting Council's Decision and Order, dated May 14, 2015, CPV Towantic, LLC hereby provides fifteen (15) days notification of the fuel pipeline/system cleaning which is scheduled to begin on October 31, 2017.

CPV Towantic, LLC's air blow pipe cleaning process will utilize oil-free high-pressure compressed air as the media to clean the fuel gas process piping systems. The process uses temporary high-pressure air compressors to pressurize the system and valves to rapidly vent the piping systems. The pressurization and depressurization cycles are repeated until the piping systems are determined to be clean. This process is an acceptable cleaning method and industry standard, which has been used successfully in many power generating facility applications and has been included our proposed cleaning protocol. As set forth in Condition 1(e), natural gas will not be used as a fuel pipeline/system cleaning medium for construction nor for any future facility modification.

With regard to known hazards, the air blow process is designed to be a low-pressure and high-velocity cleaning method to remove semi-adherent materials, water, and construction debris. Mitigation measures will include the establishment of safety boundaries or exclusion zones by the onsite Safety Manager on the downstream discharge end to mitigate personnel safety risks and to prevent exposure of other plant equipment to any potential expelled materials. All personnel/operators involved with this process will be properly trained and will be in continuous communications at both ends of the air blow. Hearing protection will be required at all times in the immediate vicinity.

CPV Towantic, LLC's Engineering, Procurement & Construction (EPC) contractor, Gemma Power Systems, located in Glastonbury, CT, will directly manage and perform the air blow process. Gemma has previously utilized the air blow process for cleaning fuel gas piping systems at several generating facilities across the United States.

As required by Condition 1(f)(vii), CPV Towantic, LLC sets forth in the attached documents the contact information for the special inspector, including written approvals of such special inspector from the Town of Oxford Fire Marshal and Building Inspector.

CPV Towantic, LLC certifies that a copy of this letter is contemporaneously being mailed to the public agencies listed below.

Should you have any questions or require additional information, please feel free to contact me anytime.

Sincerely,

Colin M. Kelly
CPV Towantic, LLC
Asset Manager
ckelly@cpv.com

cc: Department of Consumer Protection
Department of Labor
Department of Emergency Services and Public Protection
Department of Construction Services
Department of Emergency Management and Homeland Security
Town of Oxford Fire Marshal

GAS LINE AIR BLOW GUIDLELINE

FOR

CPV TOWNATIC ENERGY CENTER

Prepared	John Lone	Date	19APR17
Reviewed		Date	
Approved		Date	

Table of Contents

Scope

Gas Line Air Blow Procedure

Air blow and Targeting of Gas Lines is designed to be a high velocity, low pressure, quick method for achieving identifiable results without using the process gas. The air blow method will remove construction debris, semi adherent material, and water. An air receiver, quick opening valve and temporary pipe to control the exiting air. This method allows for targeting with a brass target to verify the cleanliness of the piping. The items below detail the equipment and piping systems that require cleaning.

1.0 Boundaries

Fuel Gas Piping from the gas yard to the (2) CTG's Final Filters, Aux Boiler Skid and (2) Duct Burner Skids. All PCV (Pressure Control Valves will be removed and pipe spools will be installed.

Gas compressors will be bypassed with temporary piping as will the performances gas heaters for the first passes of the piping air blows. This will ensure the piping is clean prior to blowing through the performance heaters.

2.0 Safety

2.1 Dirt, rust, and dust will occasionally be expelled during air blows until cleared from the line. The compressed air exiting the exhauster also generates initial noise levels greater than 80 dB, but should be reduced below 80 dB at a 50-foot radius. Therefore, eye protection will be required as well as hearing protection in the general location of the exhaust.

2.2 Barricade tape should be erected around the temporary pipe and equipment, especially the exhaust locations since construction debris might be entrained in the exhausting air streams, as well as water during the initial purges of the headers.

2.3 The site coordinator will use radio communication when the air blow entry and exit points are far apart and distance and buildings preclude line-of-sight communication.

2.4 Any scaffolding/shoring (if required) will be inspected prior to use.

2.5 Water will be purged from the permanent pipe as the initial step of this air blow procedure. Pressures will start low and then be increased until any potential water is purged.

2.6 Any pipe or hosing used for temporary or permanent piping runs will be securely restrained.

2.7 The construction project and/or plant safety representative will have the final say on all site specific requirements.

3.0 Requirements Prior to Air blow

3.1 The permanent pipe will be modified where necessary to provide flanged connections for the entry and exit pipe. Blinds or pancake (spade) flanges will be installed on the permanent piping until the temporary piping is connected.

3.2 Some valves may be removed on the gas system piping to provide flanges as tie points for jumpers or exits. These valves should not be removed until temporary exhaust piping is connected, unless blinds will be installed. These valves are mostly located just above ground and floor penetrations.

3.3 Jumpers on the Lateral or associated piping which is not part of the scope will be isolated.

3.4 All temporary spools to either bypass equipment or flow through removed equipment shall be installed where indicated on the marked up P&IDs.

3.5 Project personnel will walk each system to be blown prior to pressurizing the piping to verify all jumpers and blow through spools have been installed, and any hosing/piping that needs to be secured has been completed.

3.6 During walk down any LOTO requirements will be met for safe handling of air pressure and forces associated with air blow.

4.0 Air Blow Sequence

4.1 See drawing for the physical locations of entrance and exit points. Also the marked up P&IDs for proper flow paths.

4.2 Each flow path will follow the steps in Section 7. Final target acceptance will be per Appendix 1 at the end of the procedure, and is per GE guidelines.

4.3 Gas Line Air Blows will start at the final filter connection at each CTG and blow to the incoming gas yard.

4.4 Blows will also be completed to the Aux boiler, each HRSG Duct Burner Skid.

4.5 Air blowing of the GE supplied equipment will be conducted with GE per GE procedures.

5.0 Air Blow Procedure (To be followed for each line blown.)

5.1 Purge water in underground piping

NOTE: Even after the underground main headers have been purged of water, most branches have vertical elevation drops and may still contain water. Branch lines will be purged of water to prevent damage caused by water hammer prior to the full pressure air blows.

5.2 Configure the temporary and permanent piping for the flow path to be blown. Isolate all other branch flow paths.

5.3 Close the discharge air blow valve at the exit of the line being cleaned.

5.4 Open the temporary butterfly valve between the air receiver and the piping.

5.5 Radio communication must now be maintained between the exit and entrance locations. Pressurize the air receiver to 15 psig. Then close the valve from the compressor to the air receiver.

CAUTION: This step might move water out of the underground pipe and steps must be taken to counteract any sudden un-expected forces in the lines and hoses.

5.6 Slowly open the discharge air blow valve at the exit of the now pressurized underground line. If necessary, throttle the discharge air blow valve to control the flow of water that is being discharged.

5.7 Continue steps 1.2 through 1.5 until water stops exiting.

5.8 Up the air receiver to 30 psig and repeat steps 1.2 through 1.6, continuing to purge the system until only moist air is exiting.

5.9 Increase the air receiver pressure to 80 psig and purge water from the system as before.

NOTE: You might only need to let the system pressure decay to 50 psig to effectively purge water. This will reduce the pump up time required to get back to 80 psig.

5.10 Charge the air receiver to 100 psig and do a final water purge. After this final purge, the system should be free of standing water.

5.11 Charge the air receiver to 125 psig or the maximum setting of the air compressor if it is lower. (temp piping flanges are rated 150#, as are the Plant Air and Instrument Air flanges. The Natural Gas line flanges are rated 600#.)

5.12 Quickly open the discharge air blow valve.

5.13 Once the air receiver pressure has decayed to around 80 psig, close the discharge air blow valve.

5.14 Repeat steps 7.2 through 7.4 three or four times. If debris continues to be heard pinging against the temporary exit pipe, do more air blows until the pinging stops and is free of visible debris.

5.15 If the current exit point is not to be targeted:

5.15.1 Turn off the air compressor and ensure the system pressure is exhausted to 0 psig by leaving the discharge air blow valve open.

5.15.2 Close the temporary butterfly valves between the air receiver and the underground piping. (Apply LOTO as necessary.)

5.15.3 Then reconfigure the temporary piping for the next air blow in the sequence.

5.16 If doing a targeted blow:

5.16.1 Block in the air compressor and ensure the system pressure is exhausted to 0 psig by leaving the discharge air blow valve open.

5.16.2 Insert a target into the line.

5.16.3 Close the discharge air blow valve.

5.16.4 Then re-pressurize the underground line to the pressure used in step 7.2 and quickly open the discharge air blow valve.

5.16.5 Leave the discharge air blow valve open and block in the air compressor.

5.16.6 Once air stops exiting the underground piping, remove the target and inspect it visually. If an acceptable target has been achieved, insert a second target and complete another air blow to acceptable targets per GPS spec: For the natural gas line validation acceptance in accordance with Attachment #1.

5.16.7 If the second target is acceptable, reconfigure for the next blow. Otherwise complete additional air blows without a target in the line, and continue until two consecutive targets are achieved.

6.0 References

6.1	GE GEK	110483c	Cleanliness Requirements for Power Plant Installation
6.2	GE GEK	116771	Fuel Supply System Cleaning for Gas Turbines

Confirmation of Service Completion

This confirms completion of this Air Blow Procedure on the following system:

1. CTG 1

By: ______________________ Date: ______________________

Gemma Power Representative

By: ______________________ Date: ______________________

Project Owner Representative

By: ______________________ Date: ______________________

General Electric Representative

Confirmation of Service Completion

This confirms completion of this Air Blow Procedure on the following system:

2. CTG 2

By: ______________________ Date: ______________________

Gemma Power Representative

By: ______________________ Date: ______________________

Project Owner Representative

By: ______________________ Date: ______________________

General Electric Representative

Confirmation of Service Completion

This confirms completion of this Air Blow Procedure on the following system:

3. Aux Boiler

By: ______________________ Date: ______________________

Gemma Power Representative

By: ______________________ Date: ______________________

Project Owner Representative

Confirmation of Service Completion

This confirms completion of this Air Blow Procedure on the following system:

4. Duct Burner Skid # 1

By: ______________________ Date: ______________________

Gemma Power Representative

By: ______________________ Date: ______________________

Project Owner Representative

By: ______________________ Date: ______________________

General Electric Representative

Confirmation of Service Completion

This confirms completion of this Air Blow Procedure on the following system:

5. Duct Burner Skid #2

By: ______________________________ Date: ______________________________

Gemma Power Representative

By: ______________________________ Date: ______________________________

Project Owner Representative

By: ______________________________ Date: ______________________________

General Electric Representative

Confirmation of Service Completion

This confirms completion of this Air Blow Procedure on the following system:

6. FG Compressor Skid Blow

By: ______________________________ Date: ______________________

Gemma Power Representative

By: ______________________________ Date: ______________________

Project Owner Representative

By: ______________________________ Date: ______________________

General Electric Representative

Confirmation of Service Completion

This confirms completion of this Air Blow Procedure on the following system:

1. FG Compressor Skid Blow

By: ______________________________ Date: ______________________

Gemma Power Representative

By: ______________________________ Date: ______________________

Project Owner Representative

By: ______________________________ Date: ______________________

General Electric Representative

Appendix 1
Target Specifications

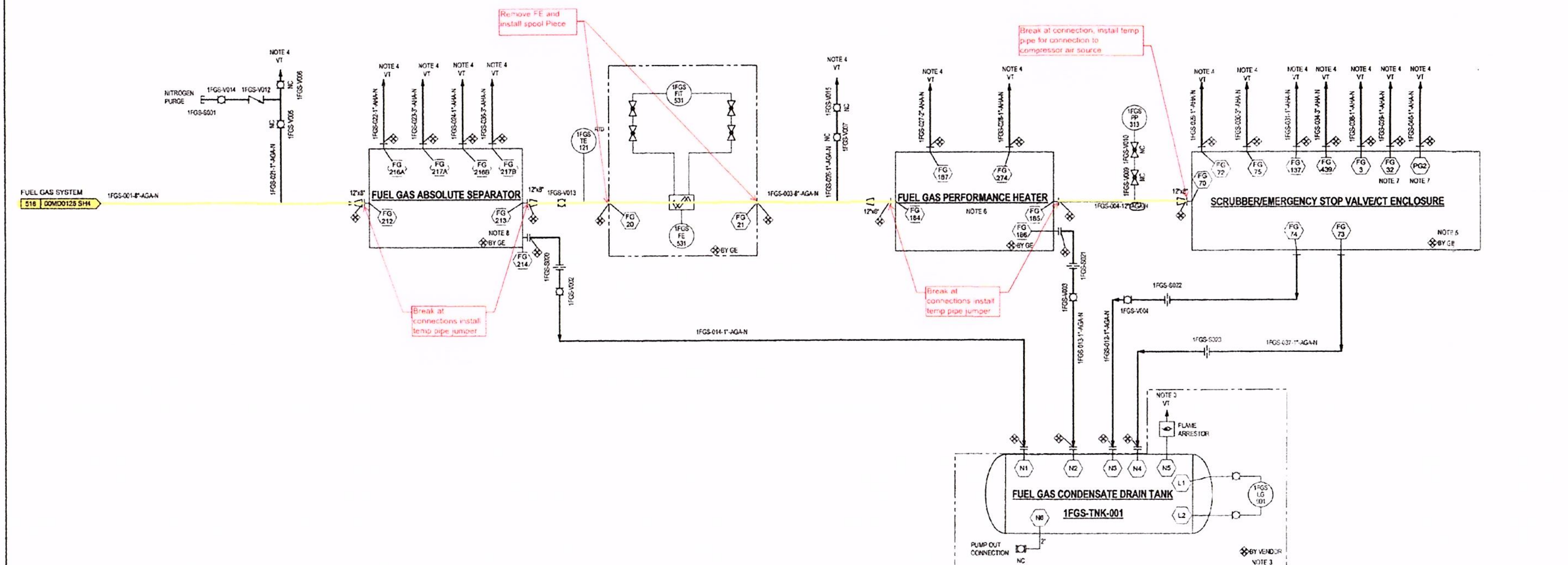
Validation blow target coupon acceptance criteria:

Parameter	Criteria
Minimum Cleaning Force Ratio (CFR)	>1.00
Maximum impact diameter per 6 square inches of target surface area	< 0.04 in (< 1mm)
Maximum quantity of impacts visible to the naked eye >0.01 inches (<0.25 mm) per 6 square inches of target surface area.	5
Consecutive passing blows required	2
Additional Criteria: • No impact indication shall have a raised shoulder • No imbedded material • Rounded or smooth impacts due to water impingement shall not be considered • No edge impacts that make the true impingement size indeterminate • No Major discoloring • Service Blows Shall be deemed cleaned by visual inspection with a clear plume	

Appendix 2
CFR Calculations

To be added later

Appendix 3
Drawings



NOTES

1. FOR GENERAL NOTES SEE DRAWING 00MD0001 SH1.
2. FOR P&ID SYMBOLS AND LEGEND SEE DRAWINGS 00MD0002 SH1 THROUGH SH3.
3. BY VENDOR, SEE JOHNSON MARCH DWG #LH5366-M11.
4. VENT TO SAFE LOCATION.
5. FOR SCRUBBER REFER TO GE DWG 119T9549. FOR STOP VALVE/CT ENCLOSURE REFER TO GE DWG 119T9542.
6. BY VENDOR, SEE VENDOR DWG 119T9552.
7. AIR VENT FOR PURGE CREDIT.
8. FOR FUEL GAS ABSOLUTE SEPARATOR REFER TO GE DWG 119T9554

INTER-DISCIPLINE REVIEW

DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE					2-13-2017	
INIT					JT	

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
3	ISSUED FOR CONSTRUCTION	2/13/2017	MS	MS	JT	WR
2	ISSUED FOR CONSTRUCTION	1/27/2017	MS	MS	JT	WR
1	ISSUED FOR CONSTRUCTION	9/30/2016	RG	AB	RG	BU
0	ISSUED FOR CONSTRUCTION	6/17/2016	RG	AJB	RG	RN/BU

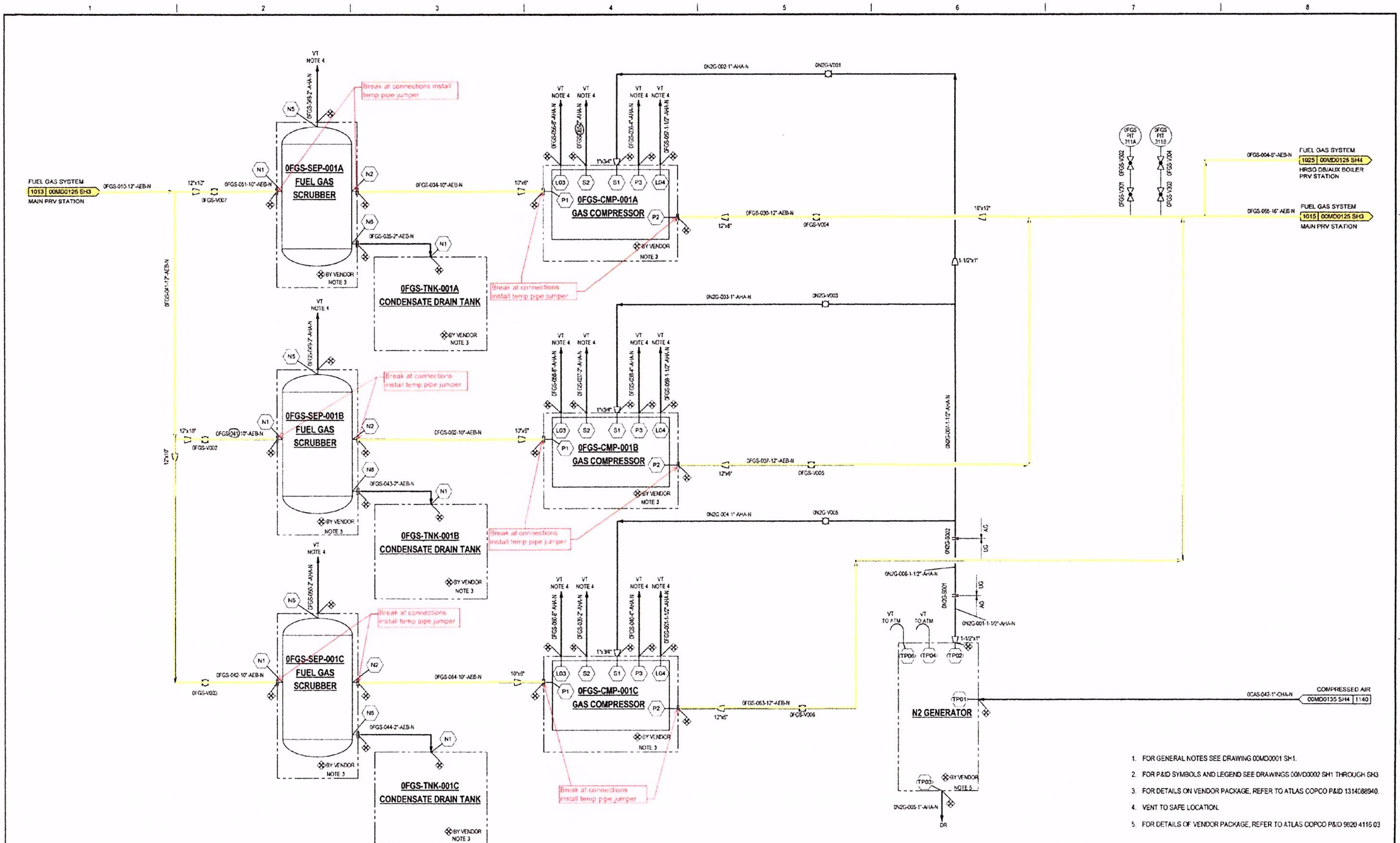
DSGN
DRN
CKD
SCALE: NONE

GEMMA POWER SYSTEMS, LLC

POWER ENGINEERS
CONNECTICUT CERTIFICATE OF AUTHORIZATION NO. 731

GEMMA POWER SYSTEMS, LLC
TOWANTIC ENERGY CENTER
OXFORD, CONNECTICUT
PIPING & INSTRUMENTATION DIAGRAM
FUEL GAS SYSTEM

JOB NUMBER: 140564
REV: 3
DRAWING NUMBER: 01MD0126 SH1



1. FOR GENERAL NOTES SEE DRAWING 00MD0001 SH1.
2. FOR P&ID SYMBOLS AND LEGEND SEE DRAWINGS 00MD0002 SH1 THROUGH SH3.
3. FOR DETAILS ON VENDOR PACKAGE, REFER TO ATLAS COPCO P&ID 1314088940.
4. VENT TO SAFE LOCATION.
5. FOR DETAILS OF VENDOR PACKAGE, REFER TO ATLAS COPCO P&ID 9820 4116 03

INTER-DISCIPLINE REVIEW

DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE				1-27-2017		
INIT				JT		

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
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2	ISSUED FOR CONSTRUCTION	9/30/2016	RG	AB	RG	BU
1	ISSUED FOR CONSTRUCTION	8/24/2016	RG	AB	RG	RN/BU
0	ISSUED FOR CONSTRUCTION	6/27/2016	RG	MS	RG	RN/BU

DSGN
DRN
CKD
SCALE: NONE

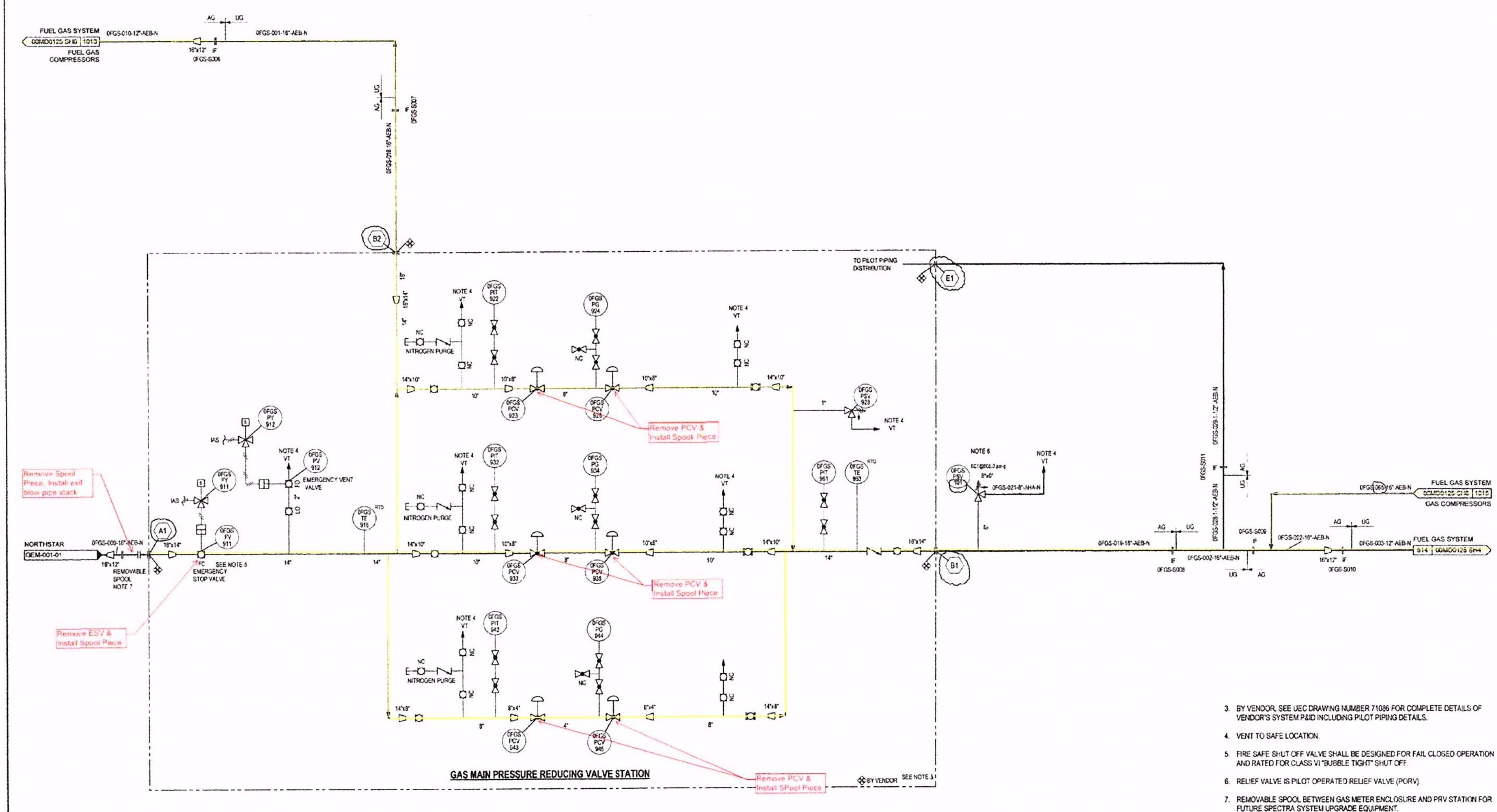
GEMMA POWER SYSTEMS, LLC

POWER ENGINEERS

CONNECTICUT CERTIFICATE OF AUTHORIZATION NO. 781

GEMMA POWER SYSTEMS, LLC
TOWANTIC ENERGY CENTER
OXFORD, CONNECTICUT
PIPING & INSTRUMENTATION DIAGRAM
FUEL GAS SYSTEM

JOB NUMBER 140564
REV 4
DRAWING NUMBER 00MD0125 SH6



3. BY VENDOR, SEE UEC DRAWING NUMBER 71086 FOR COMPLETE DETAILS OF VENDOR'S SYSTEM P&ID INCLUDING PILOT PIPING DETAILS.
4. VENT TO SAFE LOCATION.
5. FIRE SAFE SHUT OFF VALVE SHALL BE DESIGNED FOR FAIL CLOSED OPERATION AND RATED FOR CLASS VI "BUBBLE TIGHT" SHUT OFF.
6. RELIEF VALVE IS PILOT OPERATED RELIEF VALVE (PORV).
7. REMOVABLE SPOOL BETWEEN GAS METER ENCLOSURE AND PRV STATION FOR FUTURE SPECTRA SYSTEM UPGRADE EQUIPMENT.

INTER-DISCIPLINE REVIEW

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DATE					1/13/2017	
INIT					JT/[illegible]	

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
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0	ISSUED FOR CONSTRUCTION	6/27/2016	RG	MS	RG	RN/BU

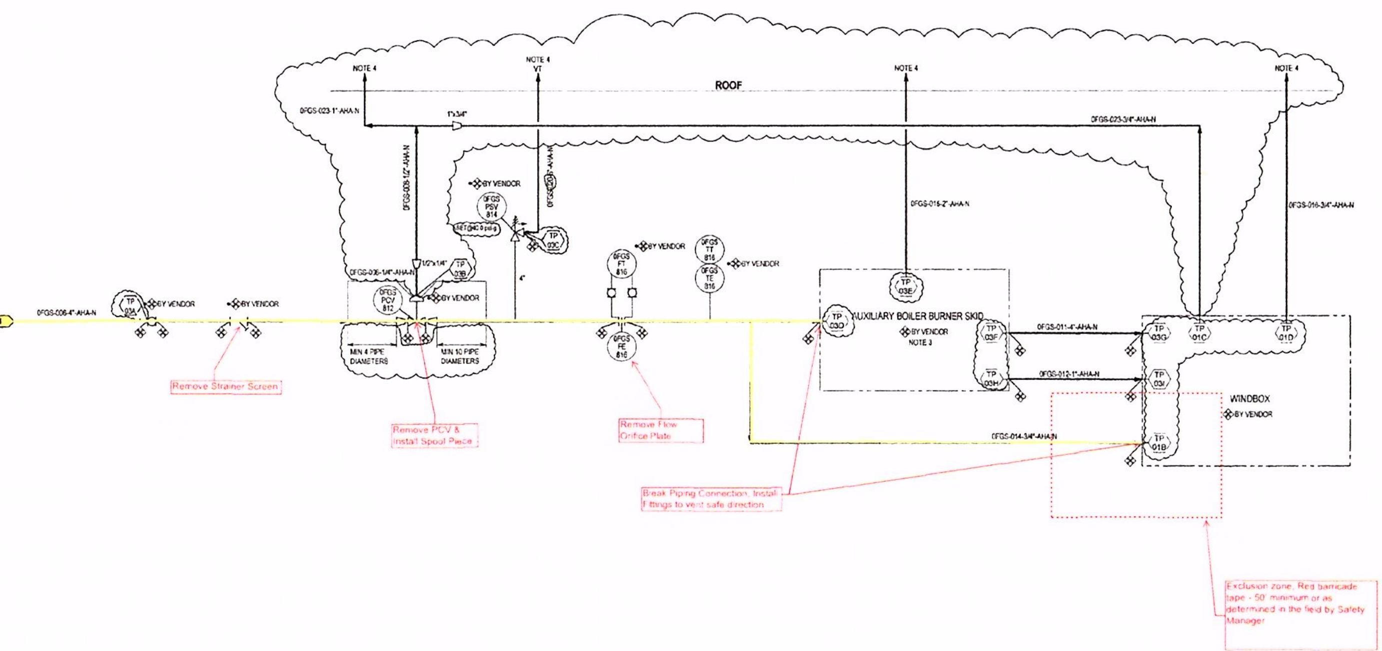
DSGN
DRN
CKD
SCALE: NONE

GEMMA POWER SYSTEMS, LLC

POWER ENGINEERS
CONNECTICUT CERTIFICATE OF AUTHORIZATION NO. 781

GEMMA POWER SYSTEMS, LLC
TOWANTIC ENERGY CENTER
OXFORD, CONNECTICUT
PIPING & INSTRUMENTATION DIAGRAM
FUEL GAS SYSTEM

JOB NUMBER: 140504
REV: 2
DRAWING NUMBER: 00MD0125 SH3



NOTES

1. FOR GENERAL NOTES SEE DRAWING 00MD0001 SH1.
2. FOR P&ID SYMBOLS AND LEGEND SEE DRAWINGS 00MD0002 SH1 THROUGH SH3.
3. BY NATCOM-CB, SEE VENDOR DWG PI-1001.
4. VENT TO SAFE LOCATION.
5. CLEAVER BROOKS IS FURNISHING THE FOLLOWING ITEMS LOOSE FOR INSTALLATION IN THE BURNER PIPING: ISOLATION BALL VALVE, STRAINER, REGULATOR VALVE, RELIEF VALVE AND FLOW ELEMENT

INTER-DISCIPLINE REVIEW						
DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE					1-27-2017	
INIT					JT	

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
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1	ISSUED FOR CONSTRUCTION	8/24/2016	RG	AB	RG	BU
0	ISSUED FOR CONSTRUCTION	6/27/2016	RG	MS	RG	RN/BU

DSGN
DRN
CKD
SCALE: NONE

GEMMA POWER SYSTEMS, LLC

POWER ENGINEERS

CONNECTICUT CERTIFICATE OF AUTHORIZATION NO. 781

GEMMA POWER SYSTEMS, LLC
TOWANTIC ENERGY CENTER
OXFORD, CONNECTICUT
PIPING & INSTRUMENTATION DIAGRAM
FUEL GAS SYSTEM

JOB NUMBER	REV
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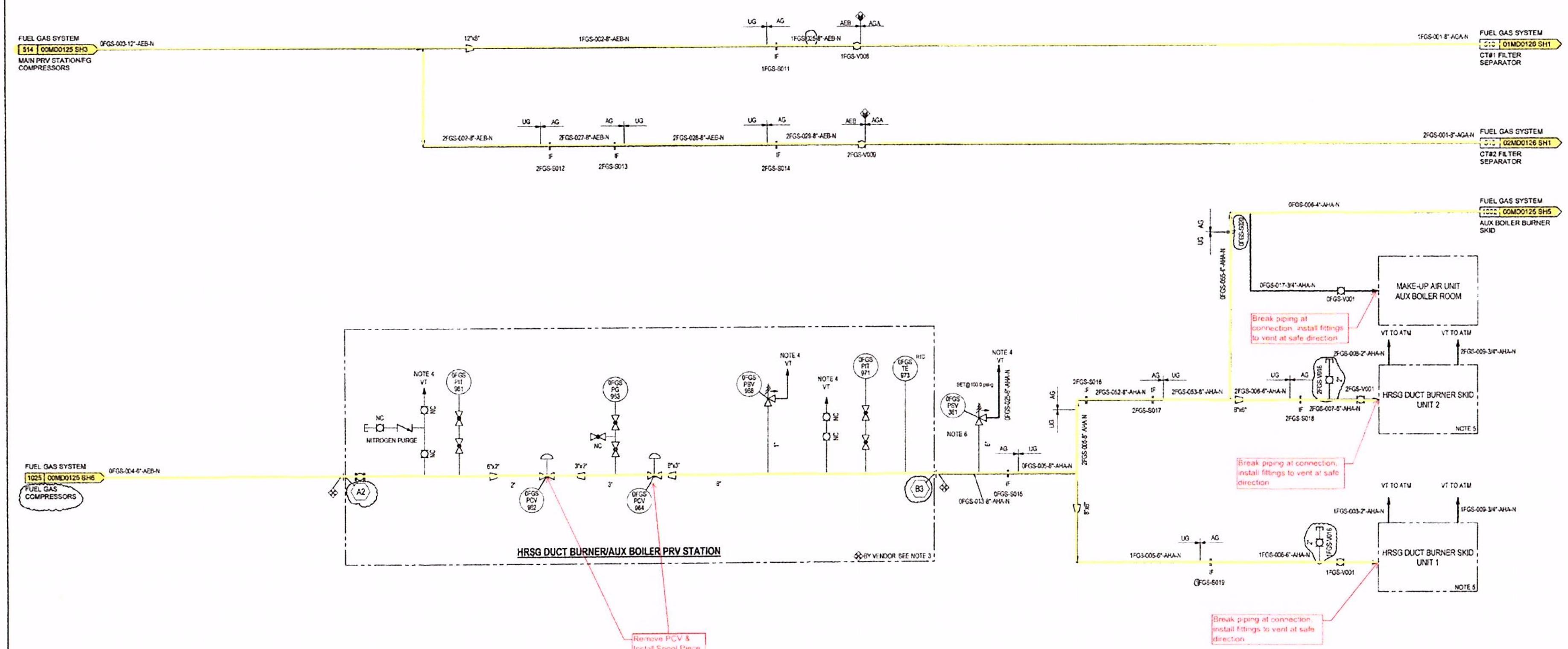
DRAWING NUMBER
00MD0125 SH5



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1. FOR GENERAL NOTES SEE DRAWING 00MD0001 SH1.
2. FOR P&ID SYMBOLS AND LEGEND SEE DRAWINGS 00MD0002 SH1 THROUGH SH3.
3. FOR DETAILS OF PRV SKID REFER TO UEC DRAWING 71086 FOR COMPLETE DETAILS OF VENDOR'S SYSTEM P&ID INCLUDING PILOT PIPING DETAILS.
4. VENT TO SAFE LOCATION.
5. FOR DETAILS OF HRSG DUCT BURNER SKID REFER TO DE JONG COMBUSTION DRAWING # 0903-001.
6. RELIEF VALVE IS PILOT OPERATED RELIEF VALVE (PORV).

INTER-DISCIPLINE REVIEW						
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INIT					[illegible]	

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
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1	ISSUED FOR CONSTRUCTION	8/31/2016	RG	MS	RG	BU
0	ISSUED FOR CONSTRUCTION	6/27/2016	RG	MS	RG	RN/BU

DSGN
DRN
CKD
SCALE: NONE

GEMMA POWER SYSTEMS, LLC

POWER ENGINEERS

CONNECTICUT CERTIFICATE OF AUTHORIZATION NO. 781

GEMMA POWER SYSTEMS, LLC
TOWANTIC ENERGY CENTER
OXFORD, CONNECTICUT
PIPING & INSTRUMENTATION DIAGRAM
FUEL GAS SYSTEM

JOB NUMBER: 140564
REV: 2
DRAWING NUMBER: 00MD0125 SH4

TOWN OF OXFORD
S.B. CHURCH MEMORIAL TOWN HALL
486 OXFORD ROAD
OXFORD, CT 06478-1298

Scott J. Pelletier, Fire Marshal

October 16, 2017

Mr. Colin Kelly
Asset Manager
CPV Towantic, LLC
16 Woodruff Hill Road
Oxford CT 06478

Re: DOCKET 192B – CPV Towantic LLC; CSC Decision & Order Conditions 1(f)-
Approval of Special Inspector for Fuel Gas Cleaning

Dear Mr. Kelly:

This letter confirms receipt of CPV Towantic, LLC submitting candidates for use as Fuel Pipeline/System 'Special Inspector' to oversee the air blow cleaning activity at the CPV Towantic Generating Site. The Town of Oxford has reviewed the provided credentials of Mr. John Davenport and Mr. Jay Gamble, proposed 'Special Inspector' that were submitted. We agree that their qualifications are good and agree with your decision to have them approved for this upcoming planned activity.

Please provide my office with proper notification prior to air blow and pipe cleaning taking place.

Respectfully submitted,

Scott J. Pelletier, Fire Marshal
Town of Oxford

cc: File
Jamie Pike (jpike@cpv.com)

October 2, 2017

Mr. Colin Kelly
Asset Manager
CPV Towantic, LLC
16 Woodruff Hill Road
Oxford, CT. 06478

Re: DOCKET 192B – CPV Towantic LLC; CSC Decision & Order Conditions 1(f) – Approval of Special Inspector for Fuel Gas Cleaning

Dear Mr. Kelly:

This letter confirms receipt of CPV Towantic, LLC submitted candidates for use as Fuel Pipeline/System 'Special Inspector' to oversee the air blow cleaning activity at the CPV Towantic Generating Site. The Town of Oxford has reviewed the provided credentials of Mr. John Davenport and Mr. Jay Gamble – proposed 'Special Inspector' that were submitted and have concluded their qualifications are sufficient and have approval for this upcoming planned activity.

Please provide my office with proper notification prior air blow and pipe cleaning taking place.

Sincerely,

Gordon Gramolini

Gordon Gramolini

Oxford Building Official

203-828-6511

NORTHSTAR INDUSTRIES, LLC

Biography

Mr. John (Jay) A. Gamble, Jr.

Vice President of Engineering and Project Management

Jay is a Professional Engineer with 25 years of operations and project execution experience in the natural gas industry. His expertise is in the areas of project management, operations management, engineering & design, and construction management with extensive natural gas utility and LNG peak-shaving operations experience.

Jay graduated *cum laude* with a Bachelor of Science degree in Mechanical Engineering Technology from Northeastern University in Boston, MA in 1993 and in 2010 graduated from Boston University with a Master's of Science degree in Management with a concentration in Project Management. He has also taken many technical and leadership classes provided by educational institutes and industry associations.

Upon graduating from Northeastern University, he joined the Pipeline Services Group at Stone & Webster Engineering Corp. in Boston, MA from 1993 to 1997 where he served as a Staff Mechanical Engineer, Lead Mechanical Engineer or Project Engineer on numerous natural gas, LNG, propane and petroleum projects.

Jay joined Northstar Industries in September 1997 as a Project Engineer on natural gas and LNG projects, and in 2000 he was promoted to Lead Mechanical Engineer and Manager of the Mechanical Engineering & Facilities Group. In this role Jay was responsible for the mechanical & piping design work and project documentation for all projects as well as the development and execution of LNG, gas compression, gas processing and propane projects.

In June 2005, Jay joined Greenville Utilities Commission as the Gas System Engineer. As the Gas System Engineer for a municipal utility in North Carolina, he served many roles including managing the Gas Engineering group; providing operations management and technical support for the company's LNG peak-shaving facility; performing strategic planning, and design and operations engineering support for the gas distribution system including the SCADA system; performing project management on capital maintenance & expansion projects; assisting with gas supply and gas purchasing activities; and assisting with the management of the Gas Department.

Jay joined the Northeast Region Technical Operations Group of Spectra Energy Transmission, LLC in August 2008 as a Principal Engineer in the Pipeline Integrity Group where he primarily served as a project manager on maintenance capital projects. In February 2009, he was promoted to Manager, Project Execution where he was responsible for the portfolio management of the Region's $100 million maintenance capital projects budget. Jay's responsibilities also includes training and mentoring region project managers, developing region level project initiation and management of change processes and procedures, and coordinating the design, drafting and material procurement of maintenance projects. Then in January 2012, Jay was promoted to Manager, Pipeline Integrity where he was responsible for the management and execution of the company's Pipeline Integrity Program.

In August 2012, Jay returned to Northstar Industries as Director - Engineering & Project Management. In this role he was responsible for leading the engineering, design and project management activities for all Northstar projects. Then in January 2015, Jay was promoted to VP - Engineering & Project Management and has taken on more responsibilities related to the day to day operations of the company.

Jay is an active member of the Appalachian Gas Measurement Short Course (AGMSC). He is an instructor at the school and formerly held the positions of Chair of the Executive Committee (President), General Committee and Program Committee. Jay is also a member of the National Society of Professional Engineers (NSPE), Project Management Institute (PMI), and American Society of Mechanical Engineers (ASME).

Jay is a licensed Professional Engineer (PE) in the states of New Hampshire, Massachusetts, Connecticut, Pennsylvania, New Jersey, Virginia, North Carolina, and Colorado. He is also a certified Project Management Professional (PMP).

Nacogdoches Power – Project Manager as owner's engineer for a 100MW wood fired power plant in Texas. MM provided full development support services, including environmental support, site development, preparation of site plans and process diagrams, detailed procurement specifications for the bubbling bed boiler and steam turbine, and preparation of a minimum design criteria to support EPC bids for the facility.

Stelco – Steel Mill Cogeneration Project – Project Manager as owner's engineer on a cogeneration project at a steel mill. The project consists of three 500 kpph boilers fired by blast furnace gas, coke oven gas and natural gas and two steam turbines totalling 95MWs.

EPS – Garelick Farms Cogeneration Projects – Project manager for the detailed engineering and design of two 2MW cogeneration projects providing electricity, steam and hot water to dairies. The projects used gas fired reciprocating engines.

SWES – Al Mussiab Power Plant, Iraq – Project manager on a 500MW power project utilizing 10 LM6000 combustion turbines, a refinery and 32 million gallon tank farm. Mott MacDonald is performing detailed design of the civil/structural, mechanical, electrical and I&C engineering.

InterGen Power Projects – Owner's engineer responsible for reviewing engineering and design on multiple projects ranging in capacity from 50MW to 1000MW.

Desoto County Generating Plant, Arcadia, FL – Project engineer on a 350MW dual fuel, simple cycle peaking facility utilizing two GE 7FA combustion turbines.

Great Yarmouth Power Plant, Great Yarmouth, England – Review of project design for a 400MW single shaft combined cycle facility based on a GE 9FA combustion turbine. Scope included serving as owner's test director for all commissioning and performance tests.

Pfizer, Groton, CT – Project engineer responsible for detailed specification and design of expansion of the steam distribution, condensate recovery and electrical upgrades on the research side of the Pfizer Groton Campus.

Wildflower Energy, LP, San Diego/Palm Springs, CA – Principal-in-charge of fast-track peaker project in California that consisted of five LM-6000s. Notice-to-proceed was given in February 2001; commercial operation was achieved in July 2001.

Pastore Energy Center, Cranston, RI – Mechanical engineer and test director for project supplying 6 MW and up to 200 000 pph of steam to the State of RI industrial center.

AES Londonderry, Londonderry, NH – Project manager for 720MW combined cycle cogeneration facility utilizing Siemens Westinghouse "G" technology combustion turbines.

Sithe Fore River and Medway Power Plants – Project manager for owner's engineering services supporting development of a 750MW combined cycle facility at Fore River and a 540MW simple cycle facility at Medway including preparing preliminary engineering documents, coordinating plant design with permitting agencies and participating in testimony before the Energy Facility Siting Board.

Kwangyang LNG Combined Cycle Facility, Korea – Project manager for detailed engineering design of a 500 MW cogeneration plant utilizing GE "F" technology combustion turbines and a reheat cycle steam turbine.

Brooklyn Navy Yard Cogeneration Partners, Brooklyn, NY – Engineering manager for the 286MW Brooklyn Navy Yard combined cycle cogeneration facility, which utilized two Siemens V84.2 gas turbines and two condensing Siemens steam turbine generators. Start-up manager during final facility commissioning and testing. Also responsible for all permitting interfaces on first independent power project constructed in New York City.