Torres Rojas, Genara FOI #13249

From: pjpanackal@gdsmechanical.com
Sent: Wednesday, June 13, 2012 5:02 PM
To: Duffy, Daniel
Cc: Torres Rojas, Genara; Van Duyne, Sheree
Subject: Freedom of Information Online Request Form

Information:

First Name: Pramod J
Last Name: Panackal
Company: GDS Mechanical, Inc.
Mailing Address 1: 39 East Hanover Ave
Mailing Address 2: Suite B1
City: Morris Plains
State: NJ
Zip Code: 07950
Email Address: pjpanackal@gdsmechanical.com
Phone: 973-993-9199
Required copies of the records: Yes

List of specific record(s):
Contract EWR-910.829 Central heating and refrigeration plant replacement of high temperature hot water generators. Request for copy of Meeting minutes between contractor and Port Authority of NYNJ. Request for copy of the all correspondence between Port Authority of NYNJ and engineer on record for this project. Request for copy of all communications between Indeck and Port Authority of NYNJ for this project.

THE PORT AUTHORITY OF NY & NJ

Daniel D. Duffy
FOI Administrator

September 27, 2012

Mr. Pramod J. Panackal
GDS Mechanical, Inc.
39 East Hanover Avenue, Suite B1
Morris Plains, NJ 07950

Re: Freedom of Information Reference No. 13249

Dear Mr. Panackal:

This is a response to your June 13, 2012 request, which has been processed under the Port Authority's Freedom of Information Code (the "Code") for copies of records related to Contract No. EWR-910.829 - Central Heating and Refrigeration Plant Replacement of High Temperature Hot Water Generator.

Material responsive to your request and available under the Code can be found on the Port Authority's website at http://www.panynj.gov/corporate-information/foi/13249-C.pdf. Paper copies of the available records are available upon request.

Please refer to the above FOI reference number in any future correspondence relating to your request.

Very truly yours,

Daniel D. Duffy
FOI Administrator

225 Park Avenue South
New York, , NY 10003
T: 212 435 3642 F: 212 435 7555

Contract EWR-910.829
Central Heating and Refrigeration Plant Replacement of High Temperature Hot Water Generators
Minutes of Meeting

Date of Meeting: February 19, 2010
Location: EWR-CTA Building 125
Copy to: Attendee List, File

Attendees:

K. Hogan	**PA Eng/CMD**
I. Palleija	**PA Eng/CMD**
K. Smolar	**PA Eng/CMD**
L. George	**GDS**
P. Scumaci	**GDS**
M. Chisom	**GDS**
N. Calliagas	**GDS**

- SAR's
  - Forms hand delivered at the meeting were incorrect and must be resubmitted
- Temporary Unit
  - Reviewed the requirements of the system
  - Discussed potential manufacturers for the unit
- New Units
  - Letter of Intent from Indek – While negotiations were still undergoing regarding the delivery of 2 or 4 HTHW generators at a time, ultimately progress must be documented from the initial stalemate.
  - It was expressed to the contractor that as a sole source portion of the contract, the permanent HTHW units should be further along. Due to the long lead time of building the units, it is imperative that a contract be signed as soon as possible in order to maintain the contract's schedule.
  - Discussion as to additional costs based on delivery and installation was had.
  - Discussion was held in regards to contractors experience requirements for the installation of the 'loose' components of the generators that will be installed on-site.
- GDS to resubmit submittal schedule with further description of work. Inadequate description of sections such as section 15560 require a great deal more description.
- Recycle Schedule required
- PA informed GDS that RFI's are to stream line the project
  - While the data for the soil capacity will be provided, to date most RFIs are superfluous informations regarding aspects of the project that are not the focus of the project as of right now. It is imperitive that these RFIs are used properly and that the focus of the contract must be the temporary and permanent generators until contracts are in hand.
- GDS was reminded to focus on Phase 1 before discussing Phase 3

- Minimum installation time has not been presented. GDS is to provide this by the next meeting.

THE PORT AUTHORITY OF NY & NJ

MEMORANDUM

TO: File
FROM: Kevin Hogan
DATE: January 28, 2010

SUBJECT: **NEWARK LIBERTY INTERNATIONAL AIRPORT – CONTRACT EWR- 910.829 – CENTRAL HEATING AND REFRIGERATION PLANT REPLACEMENT OF HIGH TEMPERATURE HOT WATER GENERATORS– PRECONSTRUCTION MEETING**

cc: P. Bonner, J. Eadiccio, U. Harper (Treas.), B. Hegarty, J. Heitmann, S. Kellner, T. LaMarca, M. Malloy, G. Martinez, W. Myers, J. Pereira, M. Podlaski, D. Pollard, R. Prince, F. Radics, H. Ret, G. Ross, R. Ruff, R. Sulewski (PA Police), D. Warren, L. Woodside

A preconstruction meeting for the subject Contract was held at 9:30 am on Friday, January 8, 2010, at the Central Terminal Area Field Trailer Building 74, Resident Engineer's Office, with the following in attendance:

K. Hogan	PA Eng/CMD	V. Antes	EWR Facilities
I. Palleija	PA Eng/CMD	R. Schnurr	PA Aviation
K. Smolar	PA Eng/CMD	P. Parfinik	PA Electric
M. Wallace	PA Eng/CMD	J. McGaughran	PA CHRP
R. Bury	CRC Engineering	A. Kosakowski	PA CHRP
C. Nystrom	CRC Engineering	J. Flynn	PA CHRP
S. Prestano	Parsons Brinkerhoff	D. Pietrocola	PA Design
D. DiDomenico	PA QAD		
PJ Panackal	GDS		
F. Ferrante	GDS		

The following items were discussed:

1. The Contract was awarded to the following Contractor:

   GDS Mechanical, Inc.
   39 E Hanover Avenue
   Morris Plains, NJ 07950
   Phone: 973-993-9199

2. The Contractor was informed of the Contract "Owners Controlled Insurance Protection" (OCIP) provisions and procedures regarding insurance coverage; Auto Liability Insurance shall be procured by the Contractor.

3. The time for Completion is 1200 calendar days (March 24, 2013).

4. The Contract was awarded on December 21, 2009. Damages for delays will be calculated at $500 per calendar day.

SUBJECT: NEWARK LIBERTY INTERNATIONAL AIRPORT – CONTRACT EWR- 910.829 – CENTRAL HEATING AND REFRIGERATION PLANT REPLACEMENT OF HIGH TEMPERATURE HOT WATER GENERATORS– PRECONSTRUCTION MEETING

5. The M/WBE Participation Plan goals for this Contract are a combined goal of 15% MBE and WBE. The Contractor has submitted their M/W/DBE Participation Plan and has been approved by the Office of Business and Job Opportunities.

6. The Contractor was reminded that a Progress Schedule should be submitted within twenty days after award.

7. The Contractor was reminded that equal employment opportunity (nondiscrimination) should prevail for all craft labor throughout the job.

8. No stockpiling of material will be allowed on site.

9. The Contractor was provided with instructions relating to the direction and processing of correspondence (see attached).

10. Safety and sanitary provisions were discussed with extreme emphasis on safe working conditions and site housekeeping. The Contractor was requested to submit a Site Specific Safety Program for review and approval. All work should be performed in conformance with local, state and federal (OSHA) rules and regulations, and that a competent person be assigned to implement the Safety Program. Daily housekeeping of all debris shall be maintained to ensure public safety at all times. The Contractor was informed that no burning or welding will be permitted without a permit issued by the Fire Marshal, and that adequate fire safety provisions are undertaken.

11. Subcontractor approval requests shall be submitted for approval in a timely manner, so that all Contractors are approved prior to their start of work. The Contractor was informed to submit them to this office, for the Engineer of Construction's approval.

12. The Contractor shall submit daily progress, equipment and labor reports.

13. The Contractor was informed that labor rates of various skilled craft, supervisory personnel and equipment rates of equipment scheduled for on site use must be submitted for pre-approval. Upon receipt, CMD and the PA Audit Department will review the information. The approved rates will be forwarded to the Contractor and may be used for future billings. All rates are subject to final audit.

14. The Contractor was informed that parking would not be available. MOT Plan to be provided by Contractor.

15. Hours of work are specifically outlined in the Contract Specifications. The Contractor was instructed that no one should be working along unsupervised and must work in pairs.

SUBJECT: NEWARK LIBERTY INTERNATIONAL AIRPORT – CONTRACT EWR- 910.829 – CENTRAL HEATING AND REFRIGERATION PLANT REPLACEMENT OF HIGH TEMPERATURE HOT WATER GENERATORS– PRECONSTRUCTION MEETING

16. The Contractor was requested to provide emergency contact names and telephone numbers.

17. The Contractor was given the following forms for contract administration:

A. Statement of Payment to M/W/DBE Subs/Lessors/Suppliers (Sample on CD) – Must be submitted with Payment Application.
B. Monthly Employment Utilization Report (MEUR-Sample on CD) – Must be filled out every month and submitted with Payment Application.
C. OCIP Guide for Contractors with forms A & B (include OCIP loss report) – Form to be filled out and returned A.S.A.P. to Michael Berger, AON Risk Services, Inc., P.O. Box 342, Jericho, New York 11753.
D. Subcontractor Approval Request Form – Must be filled out by each subcontractor working on the job and returned prior to Start of Work (Sample on CD).
E. Billing T&M/Summary of Charges (Sample on CD)/General Info. – PA Audit Verification of Charges – To be submitted for Desk Audit prior to payment submittal construction administration procedure.
F. Cutting and Welding Permit / Electrical Work Permit – Must be filled out prior to Start of Work.
G. Modified M/W/DBE Participation Plan – Used only when there is a change to the MBE Plan
H. Submittal List provided at Pre-Construction Meeting
I. Certification of Prevailing Wages – Must be on GC Letter head and notarized to be submitted with Payment Application.
J. Background Check and I.D. Badge Procedure, S.W.A.C. (Secure Worker Access Consortium).
K. Confined Space Notification – Must be filled out prior to start of Work.
L. Tax Exempt Letter

18. As per Contract Specifications, ensure that the following is submitted in a timely manner:

A. Preliminary Progress Schedule – Due 20 days after award
B. Submittal Schedule – Due 30 days after award
C. Contractor Safety Program – Due 15 days after award
D. Designated Debris Material Assessment Plan (Steel) – Due 15 days after award
E. Baseline Schedule – Due 90 days after award
F. Detailed Bid Analysis – Due 15 days after award

19. The Contractor was reminded that a Submittal Schedule/Log for Shop Drawings and Catalog Cuts should be submitted thirty (30) days after award.

20. The Contractor was reminded that a Performance and Payment Bond is required for this Contract.

SUBJECT: NEWARK LIBERTY INTERNATIONAL AIRPORT – CONTRACT EWR- 910.829 – CENTRAL HEATING AND REFRIGERATION PLANT REPLACEMENT OF HIGH TEMPERATURE HOT WATER GENERATORS– PRECONSTRUCTION MEETING

21. The Contractor was requested to submit a list of all submittal items required under the Contract (see attached).

22. The Contractor was instructed that Extra Work must be submitted in writing to the Resident Engineer's Office for approval. Net Cost work was discussed as outlined in Drawing GM101.

23. The Contractor was instructed to comply with the security requirements to provide identity checks and background screening for the Contractor as well as the subcontractors through S.W.A.C.

24. Job Progress meetings will be held at the CTA Resident Engineer's Trailer Building 125. Next meeting scheduled for Tuesday, January 19, 2010.

The Construction Resident Engineer's office will instruct you further on specific contract requirements and the preparation of proper forms which must be used for progress payments, subcontractor approvals, and change orders.

GENERAL INSTRUCTIONS RELATING TO THE DIRECTION AND PROCESSING OF CORRESPONDENCE AND OF THOSE OTHER ITEMS SPECIFIED TO BE SUBMITTED TO THE PORT AUTHORITY UNDER THE TERMS OF THE CONTRACT

DIRECTION OF CORRESPONDENCE

1. **GENERAL**

In general, all official correspondence relating to the conduct of this contract shall be directed to the Construction Resident Engineer. In the case of correspondence or other items specified herein to be directed elsewhere, the Construction Resident Engineer shall be informed by copies of correspondence or letter of transmittal:

CONSTRUCTION RESIDENT ENGINEER

Mr. Michael C. Wallace, P.E. LEED AP
Senior Resident Engineer
The Port Authority of NY & NJ
Newark Liberty International Airport
Central Terminal Area, Building 125
Newark, NJ 07114
Tel: (973) 622- 0800 x251 Fax: (973) 622-0172

2. **INSURANCE MATTERS**

Mr. Michael Berger, ARM, AVP
AON Risk Services, Inc. of New York
300 Jericho Quadrangle
P.O. Box 342
Jericho, NY 11753
Tel: (516) 342-2703 Fax: (516) 342-2727

3. **APPROVAL OF SUBCONTRACTOR**

Mr. Brian J. Hegarty, P.E.
Engineer of Construction
The Port Authority of NY & NJ
Newark Liberty International Airport
70 Brewster Road
Newark, NJ 07114
Tel: (973) 624-7679 Fax: (973) 624-9450

4. **SHOP DRAWINGS AND CATALOG CUTS**

SEND DIRECTLY TO:
Ms. Allison Frazier
Port Authority of NY & NJ
2 Gateway, 14th Floor
Newark, NJ 07102
Tel: (973) 792- 4723
Fax: (973) 792-4601

5. FOR APPROVAL OF SUBMITTALS REGARDING

a. Manufacturer/Source
b. Physical Samples
c. Product Data Sheets
d. Test Reports and Data
e. Mill Reports
f. Substitution Request
g. Manufacturers Certificates
h. Certificates of Conformance
i. Mix Designs
j. Welding Procedures
k. Welder Qualifications
l. Technical Data Sheets
m. Quality Control Procedures

Mr. Casmir J. Bognacki
Manager, Materials Engineering Div.
The Port Authority of NY & NJ
241 Erie Street – Room 234
Jersey City, NJ 07310-1397
Tel: (201) 216-2984
Fax: (201) 216-2949
Copy of transmittal to
Consultant (if any) for
information only – not processing

6. ACCIDENT REPORTS

Mr. Karl Lunan
Manager of Claims
The Port Authority of NY & NJ
225 Park Avenue South – 13th Floor
New York, NY 10003
Tel: (212) 435-3424

Ms. Christine Farrington
Deputy General Counsel
The Port Authority of NY & NJ
225 Park Avenue South – 13th Floor
New York, NY 10003
Tel: (212) 435-3417

You are requested to prepare a list of all submittals required under the Contract, by section, indicating the anticipated date when each submittal will be transmitted. The list shall be submitted to the addresses under 1 and 5 above within 10 days after receipt of this letter.

You will be advised by a separate communication from the Engineer of Materials of the items of material and equipment that will require inspection at the point of manufacture or assembly together with instructions pertaining thereto. You will be similarly advised of the action taken on the required submittals of samples, material lists and their manufacturing sources.

The Construction Resident Engineer's office will instruct you further on specific contract requirements and the preparation of proper forms which must be used for progress payments, subcontractor approvals, and change orders.

Contract EWR-910.829
Central Heating and Refrigeration Plant Replacement of High Temperature Hot Water Generators
Minutes of Meeting

Date of Meeting: January 19, 2010
Location: EWR-CTA Building 125
Copy to: Attendee List, File

Attendees:

K. Hogan	**PA Eng/CMD**	**V. Antes**	**EWR Facilities**
I. Palleija	**PA Eng/CMD**	**R. Schnurr**	**PA Aviation**
K. Smolar	**PA Eng/CMD**	**A. York**	**PA Mech**
M. Wallace	**PA Eng/CMD**	**J. McGaughran**	**PA CHRP**
R. Bury	**CRC Engineering**	**A. Kosakowski**	**PA CHRP**
C. Nystrom	**CRC Engineering**	**D. Pietrocola**	**PA Design**
S. Prestano	**Parsons Brinkerhoff**	**S. McKeon**	**PA Maint**
PJ Panackal	**GDS**		
F. Ferrante	**GDS**		
P. Scumaci	**GDS**		

1- Letter of Intent
   a. Requested: Letter of Intent from INDECK indicating agreement to purchase four (4) HTHW generators and appurtenances consistent with the sole-source letter agreement between the Authority and INDECK as furnished to you with the subject Contract bid documents
   b. GDS submitted in the meeting a purchase order issued on 1/13/10. It is NOT a letter of intent. GDS states that they are waiting from the confirmation letter from INDECK. The letter confirming the letter should arrive by 1/22/10. GDS does not expect any delay on this response. PJ Panackal will get back to Construction by the end of the week with this information.
   c. They (GDS) will be purchasing the HTHW generators, NOT Prospect Piping. Mike Wallace instructed them to resubmit the MWBE plan. Later when discussing SARs, GDS stated that they are still using Prospect Piping.

2- Subcontractor Approval Forms (SARs)
   a. Requested: SARs ready for submittals (i.e. with all ORIGINAL signatures in ink) for the major subcontractors (i.e. generator purchaser/installer, fitter, electrician, etc) consistent with the experience requirements indicated in the subject contract documents
   b. SAR for A&A has been submitted. They are covering both temporary and permanent piping. Design for these portions is included in A&A piping's scope.
      i. Proof of experience and qualifications is required for A&A piping as well as any other subcontractor to be involved in the project.

c. No other SARs have been submitted by GDS.
    i. GDS was then instructed to provide us a scope as to how each subcontractor is involved in the project.
d. Manufacturer from the factory will be starting up and commissioning the HTHW generators for approximately a week and will train all necessary employees.
e. GDS may be using SIMONEAU for the temporary HTHW generator
    i. Again they are instructed to submit information

3- Contract Required Submittals
a. Requested: Base Project Schedule, submittal schedule and site-specific safety plan.
b. Information submitted was deemed unsatisfactory. A Primavera or equivalent schedule with a full breakdown of the scope of the project is necessary.
    i. The PA expressed concern that submittals are scheduled to be submitted around April. A sooner date is required. Kevin Hogan reminded GDS that ALL material must be submitted into design.
c. Chris Nystrom reviewed the submitted schedule where the temporary unit is set to be installed in the winter of 2011. The issue with testing the system was reviewed with GDS. The contractual agreement stated on M101 was reviewed as well as an overview of the constraints of the testing of the units in general and in the CHRP.
    i. GDS understands the constraints and is going to review their schedule and move the dates accordingly so that ample time is allocated for the testing of the temporary units
d. Chris Nystrom also warns the contractor of several issues;
    i. Submittals (especially when dealing with the HTHW generators) are extensive and will take a great amount of time due to the extensiveness of the scope to be reviewed.
    ii. Do not submit catalog cuts as a submittal – they will be rejected.
e. To date an acceptable base project schedule along with a detailed project submittal schedule have yet to be submitted. GDS has been instructed again to submit the information.

4- Bond
a. Requested: Furnish a copy of the subject Contract-required Performance Bond
b. A copy of the bond was submitted. Mike Wallace gives instruction as to how to submit for reimbursement.

5- Bid Analysis

a. A bid analysis has yet to be submitted. Mike Wallace instructs GDS about how detailed the breakdown is needed. GDS is aware of the fact that they have missed this deadline.

6- Other

a. GDS is again instructed to send all communications through the RE's office.

7- Next meeting

a. Based on this meeting another meeting was deemed necessary and will be held Friday, January 29, 2010.

Prepared by: Kelly Smolar and Irene Palleija

GDS MECHANICAL, INC.

October 10, 2010

Michael C. Wallace, P.E.
Senior Resident Engineer
Construction Management Division/Engineering Department
Newark Liberty International Airport
Building #125, Central Terminal Area
Newark, NJ 07114

Re: GDS Mechanical, Inc.
Newark Liberty International Airport – Contract EWR 910.829

Dear Mr. Wallace:

Thank you for the courtesies extended to our representatives at our most recent meeting last Tuesday, October 5, 2010 relating to the above-noted project. We understand and share the frustration over the fact that the project has already departed from its intended Schedule in that the plan to have the Temporary Generator on-site and ready for operation by October 15, 2010 cannot be met. We feel that it is appropriate to briefly recap the important parts of the history of the project to date since our Contract was awarded in late December 2009.

We are all aware that this project is somewhat unusual because the 4 Permanent Hot Water Generators were specifically detailed and purchase arrangements made by the Port Authority, with the appropriate documents included as part of our Contract under the heading of Division 15, Section 15560. Obviously, a great deal of work had been done with a specified manufacturer, Indeck, before our Contract was advertised and Bids were taken. It is also apparent from our Contract that the specified Indeck permanent equipment was said to meet certain design parameters, including most importantly the "Operating Pressure" of 300 psig at 400 degrees F.

After award of the Contract to our Company, various questions were asked by us, some of which importantly came from Indeck. This, in turn, led to the Answer to RFI 12 in late March 2010 when we were advised that the Temporary Generator would have to handle a range of pressure and temperature from 260 to 300 psig and 300 to 400 degrees F. This response then led to the Answer to RFI 15 in mid-May 2010 wherein we were further advised that the lowest pressure with which the equipment would have to deal would be 205 psig. Following this response, Indeck then made a further inquiry, which in turn was answered on May 26, 2010 identified as RFI-2552-002. Among other things, this RFI Answer clarified that the 205 psig lower operating range limit was to apply to both the Temporary Generator, as well as the new Permanent Generators. We attach hereto copies of these 3 RFI's as Exhibits A, B and C, respectively.

39 E. Hanover Ave, Suite B1, Morris Plains, NJ 07950
Ph: 973-993-9199 Fax: 972-993-8444

GDS wrote to you on the date of June 7, 2010 to set forth various concerns which had arisen as a result of the cited RFI Answers. Please see copy attached hereto as Exhibit D. Further, a series of e-mail correspondence was exchanged between GDS and Indeck from mid-May through early June 2010 relating to Indeck's expressed notions about the impacts of the change in Operating Parameters; see please see copy attached as Exhibit E. This e-mail correspondence exchange continued through June 2010, involving both the Temporary and Permanent Generators. Please see copies attached hereto as Exhibits F and G.

GDS retained the services of Colvin Engineering Associates, Inc. to investigate the situation as it was developing during the summer of 2010. The Professional Engineer at Colvin wrote to GDS by letter dated August 17, 2010 to summarize the impacts of the changes made to the Contract's specified Operating Parameters by way of the cited RFI Answers. Please see copy attached hereto as Exhibit H.

By e-mail dated July 12, 2010, Indeck set forth a lengthy detailed list which required critical input from the Port Authority (and GDS); the second paragraph of this e-mail states: "In order to complete Indeck's job specific design and also finalize the GA drawing, Indeck requires GDS and the Port Authority to clarify, acknowledge or respond to the following list of questions, recommendations or discrepancies between Indeck's Proposal QU00020463 Rev. 3 and the Customer's Specification Division 15 Section 15560C (09/08/09)." Particular attention is directed to paragraphs 9 and 10 dealing with changes which will have to be made according to Indeck to meet the revised Operating Parameters. Please see copy attached hereto as Exhibit I.

The exchange of e-mail correspondence between Indeck and GDS continued through August and into September. Please see copies attached hereto as Exhibits J, K and L. Ultimately, a meeting was held at Newark Airport to discuss many of the technical issues that had been raised during the past 6 months. After the on-site meeting, Indeck furnished additional information including Operating Curves to substantiate the various modifications now said to be necessary. Please see copy attached hereto as Exhibit M.

Indeck has recently advised that it had already started to do the necessary to procure the equipment items and make ready to assemble the Permanent Generators for this project, although they were still waiting for final approvals of the requested Change Order dealing with the required modifications to the equipment which was originally specified in our Contract.

Turning to the situation of the Temporary Rental Generator, the original Contract Documents call for us as the General Contractor to locate and rent suitable equipment to meet the project's requirements and which was to function with the Operating Parameters specified in the advertised Bid Documents. Unhappily, despite great efforts on our part, the various changes in the original Operating Parameters now announced by the Port Authority has led us to conclude that we cannot locate a Temporary Generator which will function in the operating environment as it is now said to be. In particular, we note that Indeck had advised us pre-Bid that it would rent us a Zurn Temporary Generator which would meet all Contract requirements including the originally specified Operating Parameters. However, Indeck has more recently indicated that the Zurn Temporary Rental Generator will not work under the conditions described in the post-Bid RFI Answers and indeed refuses to rent us this unit. We have continued to search for available Temporary Generator equipment without any success.

We are critically aware of the time-sensitive nature of this Contract as it was planned to be executed. Given the circumstances as they now exist, we are at a loss to know how to further proceed as to both the Temporary and the Permanent Generators unless we have the required input and direction from the Port Authority. Our Company would like to do the proper job and give the Port Authority the proper end product.

We will do everything possible to be of assistance, but the delay in moving forward is not of our making and clearly would not support any legal remedy against our Company and our Performance Bond Surety. We reserve all of our rights and defenses. Please let us hear from you at our earliest convenience.

Very truly yours,

Pramod J Panackal
Officer

cc: Fredric S. Fastow, Esq.
The Port Authority of NY & NJ – Law Department
John P. McDonough, Esq.
The Port Authority of NY & NJ – Law Department
Mark L. Fleder, Esq.
Connell Foley LLP

THE PORT AUTHORITY OF NY & NJ

Request For Information

Contractor's FORM

PROJECT TITLE:	Replacement of HTHW Generators		RFI NUMBER:	12
CONTRACT NUMBER:	EWR-910.829			
TO/COMPANY:	NAME/RE:	PHONE:	FAX:	EMAIL:
Port Authority of NY/NJ	Kevin Hogan	973-622-0800-x263	973-662-0172	
	M. Wallace	973-622-0800-x251	973-662-0172	mcwallac@panynj.gov
FROM/COMPANY:	NAME/RFI:	PHONE:	FAX:	EMAIL:
GDS MECHANICAL	Mark Chisom	973-993-9199	973-993-8444	mchisom@gdsmechanical.com
RE/TITLE:	HTHW GENERATORS			
PRIORITY:	HIGHEST			
WORK IMPACT:	DESIGN, INSTALLATION			
REFERENCE/DRAWING:	N/A			
ATTACHMENTS:	☑ YES ☐ NO			

(You may attach any additional information)

THERE ARE 2 ATTACHMENTS

QUESTION:

CONTRACT SEPECIFICATION SECTION, 15560.2.03.H,,*HTHW GENERATOR DESIGN PARAMETERS* ,LISTS THE OPERATING PRESSURE AT 300psig. .THE INDECK PROPOSAL, PAGE 7, DATED SEPTEMBER 9, 2009, WHICH WAS A PART OF THE BID DOCUMENTS STATES THAT THE MINIMUM INLET PRESSURE IS 363psig. PLEASE CLAIRIFY THE FOLLOWING: 1) MINIMUM OPERATING PRESSURE. 2) NORMAL OPERATING PRESSURE. 3) MAXIUM OPERATING PRESSURE.

QUESTION SIGNED BY:	MARK CHISOM
QUESTION DATE:	3/25/2010
REQUIRED DATE:	3/26/2010

ANSWER:

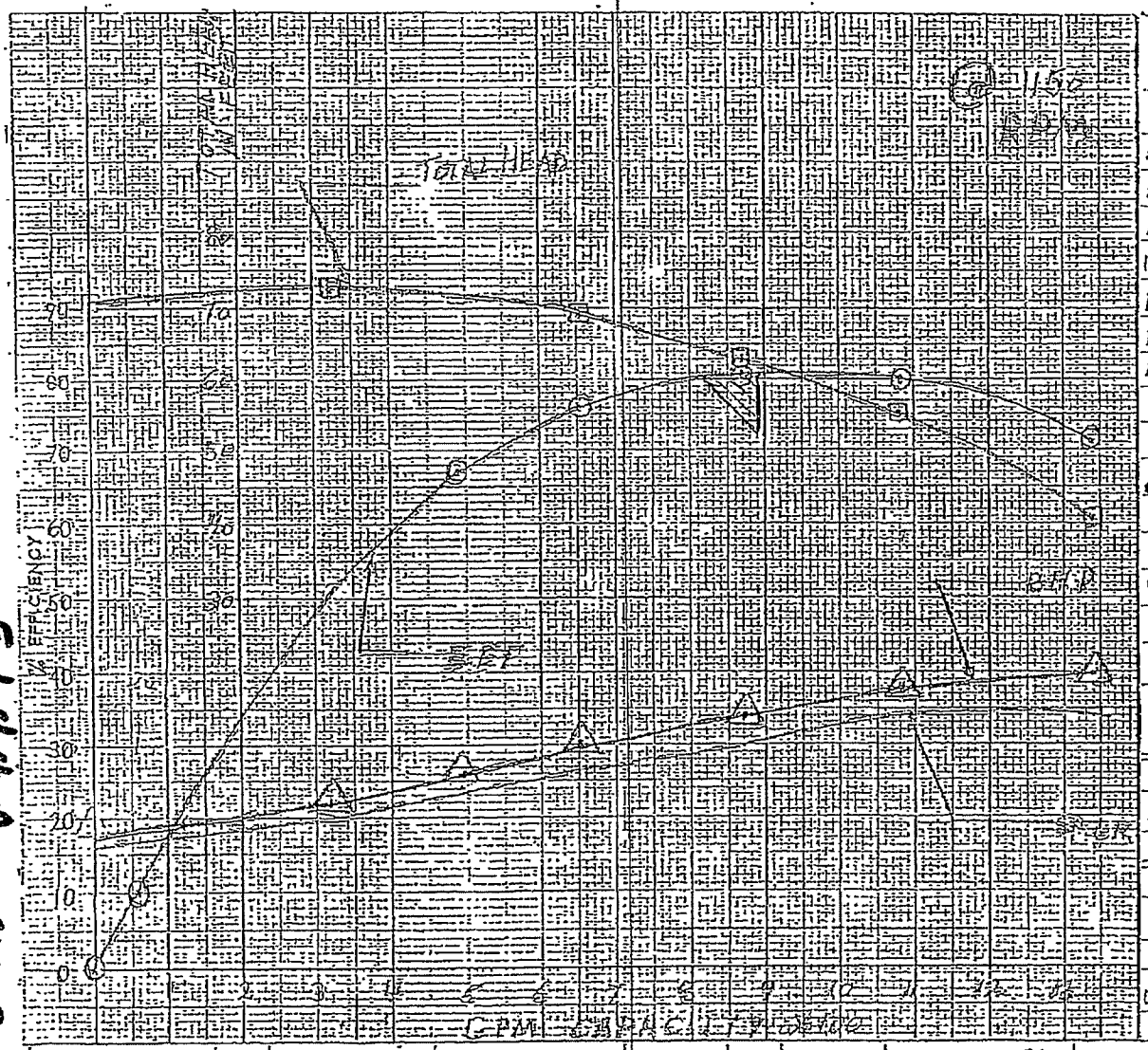
The temporary HTHW generator must fully integrate with the existing HTHW heating system at EWR without modifying current operating conditions. Please see the attached HTHW generator circ.pump curve and HTHW Mid Winter & Spring/Fall flow diagrams. The HTHW diagrams provide operating conditions for the existing system at fmax and min load. Based on the diagrams, pump curve and the burner/generator design model, the temporary HTHW generator manufacturer should have sufficient information to design the flow characteristics of the unit to prevent local vaporization of the HTHW as it absorbs heat while passing through the generator. The flow diagrams represent operating conditions at specific temperatures, pressures, and flow relationships. The attached pump curve and saturated steam tables can be used to interpret other flow, pressure and delta temperature conditions. The generator must be designed to handle the flow, pressure and delta temperature conditions throughout the operating range from return temperatures of 260 to 300 and supply temperatures of 300 to 400 f.

ANSWER SIGNED BY:	Chris Nystrom
ANSWER DATE:	3/26/2010
DEPARTMENT & DIVISION	
CM SPECIALIST:	
PHONE:	

Exhibit A - page 1

HTHW GENERATOR
CIRC. PUMPS

20 HP MOTOR.



WORTHINGTON CORPORATION
PUMP TEST DATA

RPM	GPM	HD.	BHP	EFF.	NPS
1184.1	895.0	66.7	15.[illegible]	80.5	10[illegible]
1183.3	1112.0	58.1	20.3	80.3	97.
1180.4	1370.0	43.2	21.1	70.9	85.
1185.5	675.0	73.4	16.4	76.2	95.
1187.2	502.0	76.8	14.6	66.8	86.
1188.9	328.0	77.9	12.[illegible]	51.1	[illegible]
1200.0	0	77.8	10.2	0	12[illegible]

REVISION — APP'D.

APPROVED
THE PORT OF NEW YORK AUTHORITY
DATE 10-29-69

CASING DATA

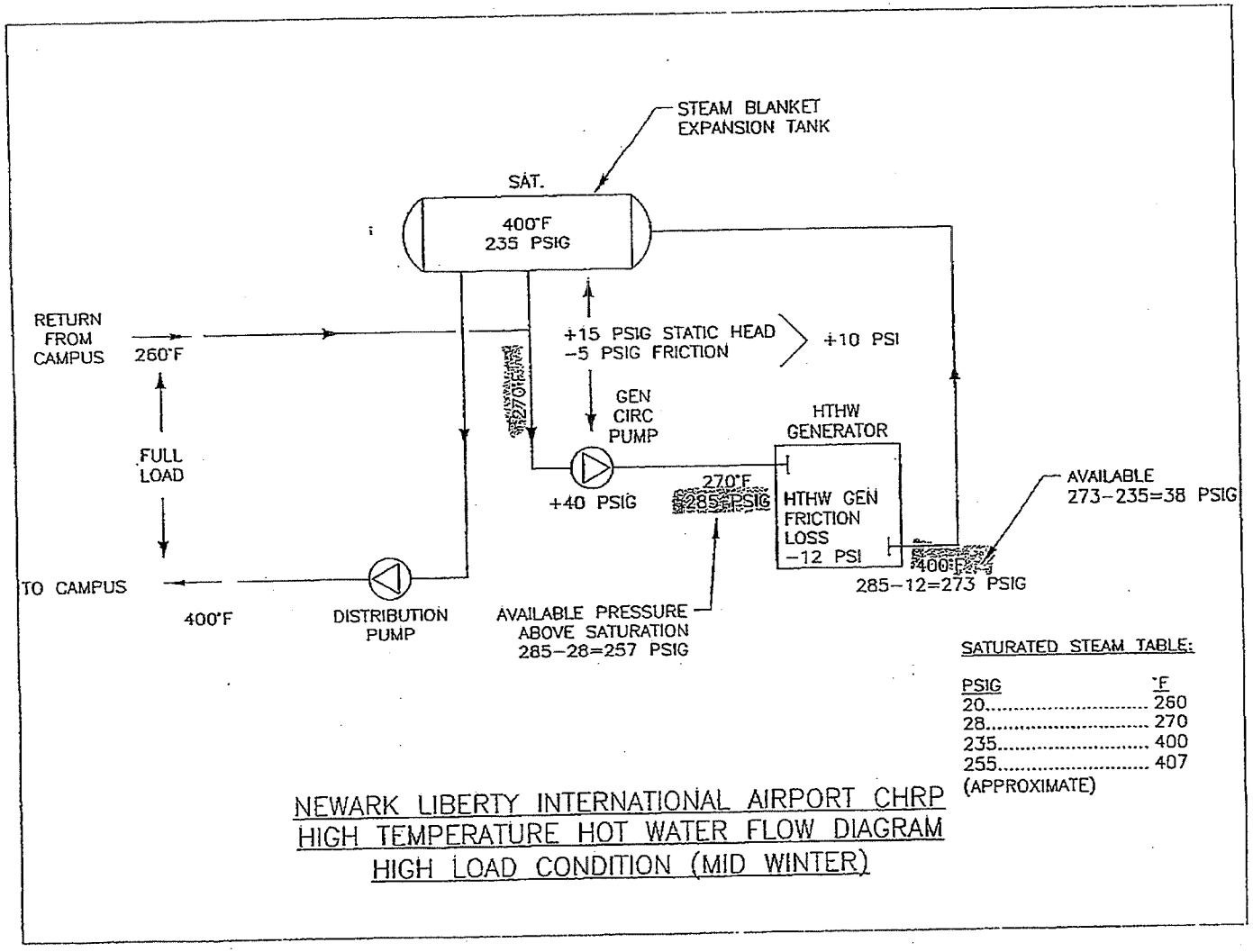
4-6% Chr		
MATERIAL	FINISH	TONGUE

IMPELLER DATA

13% Chr	2	
MATERIAL	FINISH	DISC. TIPS
UB-4587A	A 10	12 5/8"
PATT. NO.	COMB. NO.	DIA.

PUMP	STAGES	ORDER NO.	SERIAL NO.	DATE TESTED	TEST	APPROVED	TEST DRIVER	VENTURI	PLOTTED RPM	CURVE NO.
6HN-14½		P45 3771	1621685	10/16/69	W	WA	25 HP T/M	0	1150	E-196367

Exhibit A - page 2



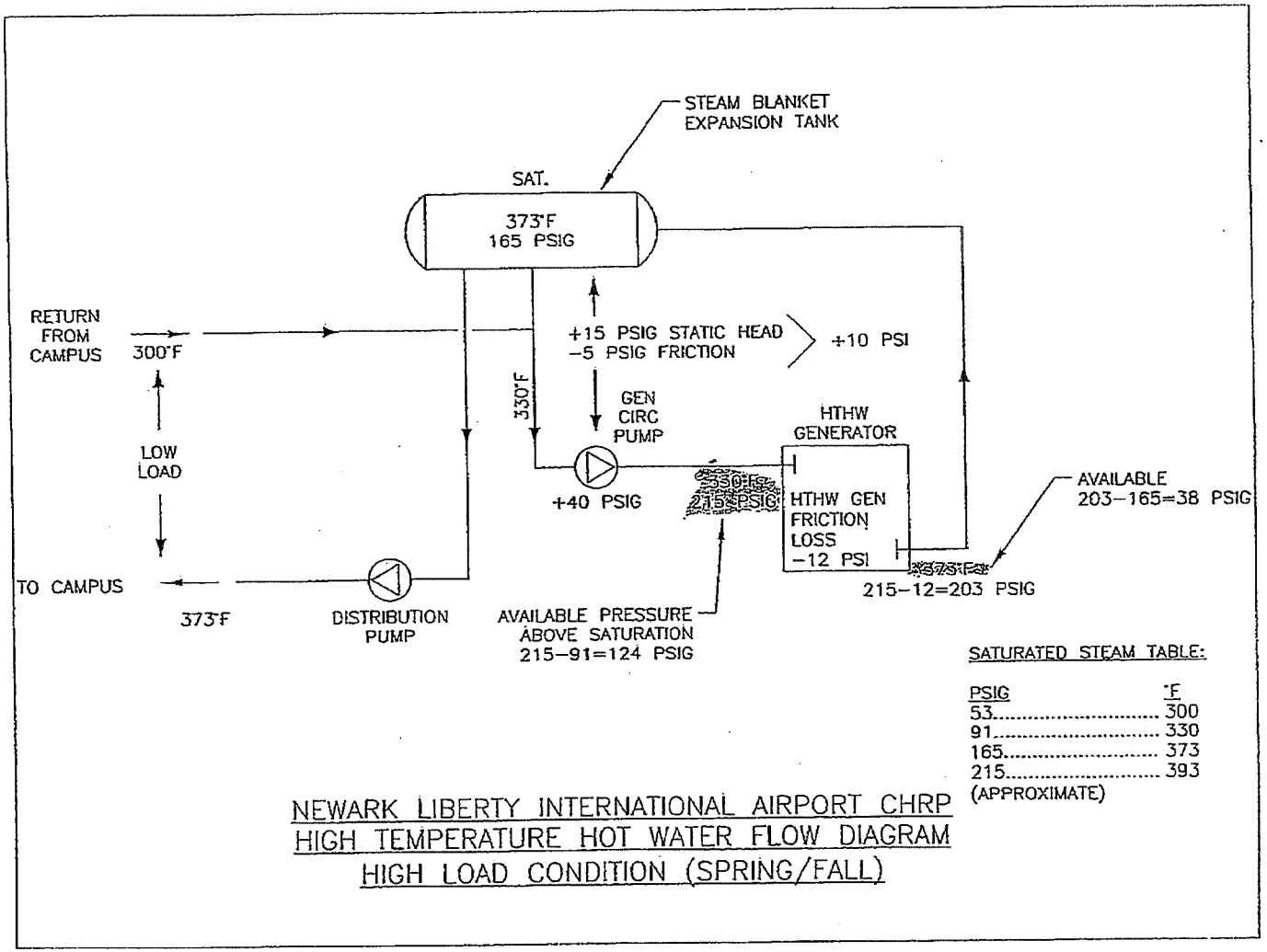
SATURATED STEAM TABLE:

PSIG	°F
20	260
28	270
235	400
255	407

(APPROXIMATE)

NEWARK LIBERTY INTERNATIONAL AIRPORT CHRP
HIGH TEMPERATURE HOT WATER FLOW DIAGRAM
HIGH LOAD CONDITION (MID WINTER)

Exhibit A - Page 3



NEWARK LIBERTY INTERNATIONAL AIRPORT CHRP
HIGH TEMPERATURE HOT WATER FLOW DIAGRAM
HIGH LOAD CONDITION (SPRING/FALL)

Exhibit A - Page 4

THE PORT AUTHORITY OF NY & NJ

Request For Information

Contractor's FORM

PROJECT TITLE:	Replacement of HTHW Generators		RFI NUMBER:	15
CONTRACT NUMBER:	EWR-910.829			
TO COMPANY:	NAME / RE:	PHONE:	FAX:	EMAIL:
Port Authority of NY/NJ	Kevin Hogan	973-622-0800-x263	973-662-0172	
	M. Wallace	973-622-0800-x251	973-662-0172	mcwallac@panynj.gov
FROM COMPANY:	NAME / RE:	PHONE:	FAX:	EMAIL:
GDS MECHANICAL	Mark Chisom	973-993-9199	973-993-8444	mchisom@gdsmechanical.com

RFI TITLE:	HTHW GENERATORS	
PRIORITY:	HIGHEST	
WORK IMPACT:	DESIGN, INSTALLATION	
REFERENCE DRAWING:	N/A	(You may attach any additional information)
ATTACHMENTS:	☐ YES	☑ NO

QUESTION:

THE RESPONSE,RFI 12 REV 1, RECEIVED 4/8/10, FROM GDS RFI NO 12, DATED 3/25/10, STATES THAT THE INLET PRESSURE REQUIRED FOR THE HTHW GENERATORS AND HTHW TEMPORARY GENERATOR WAS 285psi AT 270F UNDER WINTER CONDITIONS (FULLOR NEAR FULL LOADS).. DURING REVIEW OF RESUBMISSION OF TEMPORARY HTHW GENERATOR SUBMITTED 4/1/10 AN EMAIL WAS RECEIVED FROM THE DESIGN ENGINEER PROPOSING A NEW SCENARIO OF 225psi INLET PRESSURE AT APPROX 270F. DURING A SUBSEQUENT MEETING I ATTENDED WITH MS. SMOLAR, MR. MR. KOSAKOWSKI AND MR. McGAUHRAN IT WAS STATED THAT THE INLET OPERATING PRESSURE IS 215psi.. PLEASE CONFIRM THE EXISTING WINTER CONDITIONS THAT THE CHRP CAN OPERATE THE TEMPORARY HTHW GENERATOR AND PROPOSED INDECK HTHW GENRATORS AT.

QUESTION SIGNED BY:	MARK CHISOM
QUESTION DATE:	5/13/2010
REQUIRED DATE:	5/17/2010

ANSWER:

For clarification, the response to RFI#12 included two conditions; Mid Winter & Spring/Fall. Both conditions and any operating point inbetween are valid. Please note the lowest pressure condition occurs during the Spring/Fall condition, available HTHW generator inlet pressure is 215 PSI. Including a safety factor of 5% (for fluctuation in operating conditions during return temperature transitions) the operating pressure available at the boiler inlet is 205 PSIG at the following operating conditions:

GPM	890 GPM (Based on pump curve at desired head with multiple HTHW generators in parallel operation.)
Gen Inlet Pressure (Available)	205 PSIG
Gen Inlet Temperature Range	270 to 330 Deg. F.
Gen Discharge Temp	375 Deg. F.
Approximate Output Capacity	50 MMBTU

Please note that the temp generator will always be operating in parallel with one of the existing facility generators. When the system is in parallel operations, the HTHW flow rate is fixed at 890 GPM per unit.

ANSWER SIGNED BY:	Chris Nystrom
ANSWER DATE:	5/19/2010
DEPARTMENT & DIVISION:	
PM SPECIALIST:	
PHONE:	

Exhibit B

REQUEST FOR INFORMATION

INDECK

1111 Willis Ave.
Wheeling, IL 60090
Ph: 847-541-8300 Fax: 847-541-9984

DATE:	RFI No.	REVISION No.
5/24/2010	RFI-2552-002	0

PROJECT:	PROJECT NO.:
GDS Mechanical - Newark Airport (4) HTHW Generator	G-2552
SUBMITTED TO:	**DISCIPLINE:**
GDS Mechanical / Port Authority of NY & NJ	Design Parameters
REFERENCE DRAWING(S)/DOCUMENT(S):	**CURRENT REVISION:**
Port Authority RFI No. 15	

INFORMATION REQUESTED:

1) Per RFI #15 Indeck understands that the HTHW Generator will operate at 375°F outlet temperature with the inlet water temperature ranging from 270°F to 330°F and water flow rate of 890 GPM. In order to meet the flow rate of 890 GPM, Indeck will need to change the tube orifices from what was originally defined in Quote No. QU00020463 Rev.3 and subsequent purchase order. Our proposed design is for a typical HTHW Generator operating with a constant water flow rate. Please advise which water flow rate is to be used for the design of the HTHW Generator.

2) Advise on the Port Authority's permit limitations for firing No. 2 Fuel Oil.

3) Regarding the available generator inlet pressure as listed in RFI #15: It has come to Indeck's attention that the system schematics (for Spring/Fall included with RFI 12) show a HTHW Generator friction loss of 12psi, however the total losses would likely be approximately 15 psi when including all trim in Indeck's scope of supply. How does the additional 3 psi loss affect the generator's inlet pressure?

ANSWER:

1) The design and operational flow rate is as listed in RFI #15, 890 GPM which applies to the permanent HTHW generators.
2) The current permit limitations limit the used of No. 2 Fuel Oil to 200 operating hours per unit. Please be advised that under the new permit, the allowable operating hours are expected to be decreased but that information is not currently available or finalized.
3) If the total pressure drop across the HTHW generator package is increased from 12 to 15 PSI the inlet pressure will be unchanged. The inlet pressure is determined by the generator outlet temperature as it will provide the same system pressure (saturation pressure for 375 Deg F in the expansion tank) regardless of generator pressure drop. An increase in generator pressure drop will decrease the generator outlet pressure. So as stated in RFI #15, the available inlet generator pressure is 205 PSI.
(Please note that RFI #12 was specifically answered for the Temporary HTHW Generator package and not the permanent units

REQUESTED BY	DATE PREPARED	DATE REQUIRED
James Molina	5/24/2010	5/26/2010
ANSWERED BY		**DATE ANSWERED**
C. Nystrom/M. Wallace		5/26/2010

Exhibit C

5/24/10
Rev. 0

GDS MECHANICAL, INC.

June 7, 2010

Michael C. Wallace, P.E.
Senior Resident Engineer
Building #125, Central Terminal Area
Newark, NJ 07114

RE: Newark Liberty International Airport – Contract EWR 910.829
Response to your letter dated June 4th 2010

Dear Mr. Wallace,

Please understand that GDS Mechanical, Inc shares the same concerns of the Port Authority regarding the progress of this contract. In response to your June 4, 2010, letter, there were points that were left out that GDS would like to clarify. Since the start of the submittal phase, there have been numerous changes to the specifications, specifically to the operating pressures, flow rate and temperatures for the HTHW Generators. In addition, there has been misleading information on the reviewed, marked up returned submittals that has lead us to where we are presently. To clarify our position more clearly, I have attached a binder with all relevant information with this letter for your review. To summarize, the items below are in chronological order as filed in the binder:

1. Specification : States on page 460 that the HTHW system operating conditions as
   Operating Pressure : 400 psig
   Normal Supply Temp Range: 325 – 400 deg F
   Normal Return Tem Range: 250 – 300 deg F

   Page 465 HTHW Generator Design Parameters –
   Design Pressure: 500psig @ 470 deg F
   Operating Pressure: 300 psig @ 400 deg F

   Also with variable flow rate between 1064gpm and 730gpm

2. Sole Source Letter from Indeck: Page 7 and also Performance Data page
   Minimum Inlet Pressure: 353 psig
   Inlet Temp: 260 deg F
   Outlet Temp: 400 deg F
   Flow Rate: 759.6gpm

3. Temporary HTHW Generator Submittal #1: Since the Temporary had no Specifications to be followed the submittal was based on the design parameters

39 E. Hanover Ave, Suite B1, Morris Plains, NJ 07950
Ph: 973-993-9199 Fax: 972-993-8444

Exhibit D-9

Indicated on the Indeck Sole Source letter as we were under the impression that the sole source letter was the basis of design as per the Plant requirements. Also, if you review the marked up returned submittal, on page 1 of 3 of the trim list there are comments by the reviewer indicating that the pressure should be between 300–350 psig and the flow rate 730gpm.

4. Temporary HTHW Generator Submittal #2: Again on the marked up returned submittal on the first page the reviewer comments that Outlet temperatures are between 350 – 400 deg F and operating pressures between 300 – 400 psig. Also on the trim list page there are comments saying that the system pressure is closer to 325 psig and that the flow rate varies with delta T and pressure.

5. RFI #12: Due to the various conflicting information that was floating around GDS requests to clarify the Min, Normal and Max operating pressures available at the CHRP. The answer indicated in operating condition 1 that there was 285psig available at inlet for a 400deg F outlet temperature, which is a change to the specification that states 300psig@400degF and operating condition 2 of 215psig available at inlet for a 373degF at outlet.

6. Temporary HTHW Generator Submittal #3: After the submittal was sent in and after submitting various requested performance data as follows 325psig@400degF outlet for 50MMBTU/H and 240psig@375degF outlet for 50MMBTU/H, a meeting was requested in which we were asked to provide the max outlet that the generator can give at 285psig inlet pressure and at 215 psig inlet pressure. This information was sent in along with the emissions data and letter stating that the generator can perform at the above conditions. It was the general consensus at this point that the submission was going to get approved; this was when the plant operations pointed out some deficiencies in the general design documents.

7. New conditions are presented: We receive new conditions where GDS is requested to provide performance data for the HTHW Temporary Generator with Flow fixed @ 800gpm, Outlet temp max: 375 deg F and the operating pressure @ 50 psig above sat. pressure at outlet temp. Under these conditions, the proposed temp generator is not able to produce the required 50MMBTUH output.

8. RFI#15: With the vastly changing conditions available with each passing day, GDS requests clarification on operating conditions at the CHRP. The response is as follows – 205psig inlet pressure, outlet temp of 375 deg F and now the flow is fixed at 890gpm. Obviously available pressures have changed a great deal from 300psig@400degF. If the pressure is translated to 375degFthen the pressure would have to be 220psig. If you review, Indeck RFI No. 2 (GDS RFI No. 16) it is clear that now they have to change their proposed design as per the sole source letter to meet the current operating conditions that have been presented..

9. Two New designs to accommodate the changes for the Temporary Generator were submitted and were approved on a technical stand point.

10. Letter from Indeck stating that they require 215psig @ Inlet for Fuel oil and 206psig at Inlet for Nat. Gas with the changes made to the orifice. It is also clear that the Indeck recommended pressures are not available at the Plant and as stated by Indeck as well that the new parameters are a blatant change to the specification as well as the sole source proposal from Indeck.

11. GDS makes one final attempt to satisfy the PA by trying to get the Rental HTHW Generator available at Indeck. But as stated in the letter from Indeck this generator requires a minimum inlet operating pressure of 265psig which is not available at the plant as per the RFI#15 response.

After reviewing items 1 to 11, one can summarize that the available pressure has changed from 300psig@400degF (or 220psig@375degF) to 205psig inlet pressure at any given temp and a variable flow rate has changed to a fixed flow rate of 890gpm. Also, the max. Outlet temperature has changed from 400deg F to 375 deg F.

With the original suggestion from Indeck that they furnish the first permanent HTHW Generator as a temporary generator rejected by the Port Authority to no clear cut specification for the temporary and the ever changing condition parameters, it is GDS'S position that the Port Authority is just as much culpable in the lack of progress on this project.

GDS Mechanical, Inc has a couple of solutions to propose for the HTHW Temporary Generator to work at the CHRP. Be advised, though, that we have serious concerns about the permanent HTHW Generators as the manufacturer recommended pressures are not available at the CHRP. It is GDS Mechanical, Inc's intention to work with the PA in resolving the situation at hand and to deliver a successful project. Please advise us on how to proceed from this point on.

Respectfully,

Pramod Panackal
GDS Mechanical, Inc.

39 E. Hanover Ave, Suite B1, Morris Plains, NJ 07950
Ph: 973-993-9199 Fax: 972-993-8444

From: James Molina [mailto:jmolina@indeck-power.com]
Sent: Wednesday, June 02, 2010 7:32 PM
To: Laji George
Cc: Mark Chisom; PJ Panackal; rgorczynski@cgpowertech.com; David Smith
Subject: RE: Response to RFI#15 (clarified by RFI-2552-002)

Laji,

Attached are the predicted performance runs correspondent to the design parameters specified on RFI#15.

#2 Fuel Oil Note : the minimum pressure @ outlet is listed as 203 psig (~215psig @ inlet), this is our recommendation if firing #2 Oil continuously. We believe there is no risk of tube side deposit problems when firing at 205psig inlet pressure for less than 10 days/year on #2 Oil.

Please let me know if you have any questions and if GDS and/or The Port Authority have any concerns in regards to Indeck's response to RFI #15. Indeck needs confirmation in order to proceed with the design modifications. Our engineered design package is on hold until we receive your approval.

Please also keep in mind that Indeck's fabrication/design department cannot proceed until I provide them the final engineered design package and this is affecting the drawings deliverable schedule.

Regards,

James Molina

From: Laji George [mailto:LGeorge@GDSMechanical.com]
Sent: Wednesday, June 02, 2010 4:15 AM
To: James Molina
Cc: Mark Chisom; PJ Panackal; rgorczynski@cgpowertech.com; David Smith
Subject: RE: Response to RFI#15 (clarified by RFI-2552-002)

Jim,

10/6/2010

Exhibit E
-page 1

Please provide performance data for Nat. Gas and #2 Fuel oil at the design parameters specified in RFI-15 to back up this letter.

Thank you,

Laji George
GDS Mechanical, Inc
Ph: 973-993-9199 Fax: 973-993-8444
lgeorge@gdsmechanical.com

-----Original Message-----
From: James Molina [mailto:jmolina@indeck-power.com]
Sent: Tue 6/1/2010 9:32 AM
To: Mark Chisom
Cc: Laji George; PJ Panackal; rgorczynski@cgpowertech.com; David Smith
Subject: Response to RFI#15 (clarified by RFI-2552-002)

Mark,

In response to RFI # 15 as further clarified by RFI-2552-002:

The performance requirements clarified in answer RFI #15 and RFI-2552-002 will supersede the range of design parameters and operating conditions of "Division 15, Section 15560, Addendum No.1, dated C 09/08/09" HTHW Generator Specification, as well as the design proposed in Indeck quotation QU00020463.

Minor changes need to be made in order to accommodate the performance requirements of RFI # 15. Specifically, the changes will accommodate the revised flow rate of 890 GPM at the HTHW generator water inlet. Once the HTHW generator design is modified to meet the revised conditions set forth in RFI #15, the generator will no longer meet the operating requirements previously specified and proposed.

Given that the HTHW generator will operate continuously firing natural gas and intermittently (10 day/year or less) firing No. 2 Oil with a inlet water flow of 890 GPM and an outlet water temperature of 375°F, Indeck recommends a steady-state inlet water pressure of at least 206 psig. It is stated in answer RFI #15, that operation during transients may cause the water inlet pressure to drop as low as 205 psig. Although operating pressure may drop below our recommended threshold during transients, it is our understanding that current site practices (including water chemistry control, operating procedures, HTHW generator duty loading, and system operation) have lead to long term successful operation of similar equipment in regard to water side fouling. Given the end user's successful track record in regards to minimal water side fouling of like equipment, Indeck has no legitimate reason to require a higher operating pressure in order to meet the requirements as clarified by RFI #15 and RFI-2552-002.

Regards,

Exhibit E - page 2

From: Mark Chisom [mailto:MChisom@GDSMechanical.com]
Sent: Wednesday, May 19, 2010 3:18 PM
To: James Molina
Cc: Laji George; PJ Panackal
Subject: ewr-910.829

JIM

ATTACHED IS PORT AUTHORITY RESPONSE TO GDS RFI 15 SENT TO YOU UNDER SEPARATE COVER.; PLEASE HAVE YOUR ENGINEERS REVIEW AND PROVIDE INDECK COMMENT TO RFI RESPONSE. YOUR REPLY WILL BE NEEDED RIGHT AWAY.

Thank you,

Mark Chisom ? Project Coordinator

GDS Mechanical, Inc. ? HVAC + General Contractors

39 East Hanover Ave. ? Suite B1 ? Morris Plains, NJ 07950 ? p: 973.993.9199 ? f: 973.993.8444 ? c: 732.713.2169

mchisom@gdsmechanical.com

INDECK

Exhibit E - Page 4

Confidential information, to be seen by authorized personnel only

INDECK SPRING/FALL

Anticipated Performances Data For "International-Lamont" Hot Fluid Boiler

Project name: Newark Airport	Customer name: NY / NJ Port Authority	Ref# QU-00019523

Design conditions

Lamont size: 50	Min outlet pressure: 203.0 psig	Thermal Fluid Used: Water
Fuel Fired: Std #2 Oil	Fuel HHV: 19,882 BTU/lb	Site Elevation: 100 FASL	Ambiant Air Temp: 80 F

With economizer		Firing Rate			
		100%	75%	50%	25%
Heat Output	MMBTU/hr	50.00	37.50	25.00	12.50
Heat Input	MMBTU/hr	57.34	43.22	29.13	15.03
Boiler Efficiency (HHV) (5)	%	87.2%	86.8%	85.8%	83.2%
Boiler Efficiency (LHV) (5)	%	93.3%	92.9%	91.9%	89.3%
Thermal Fluid Flow (1)(2)	USgpm	890 at inlet fluid conditions			
	Lb/hr	417,953	411,763	405,085	397,899
Thermal Fluid Outlet Temperature (3)	F	375.0			
Thermal Fluid Inlet Temperature	F	259.6	283.9	313.3	343.6
Thermal Fluid Pressure Drop in economizer	Psig	3.0	3.0	3.0	3.0
Thermal Fluid Pressure Drop in boiler	Psig	8.9	8.7	8.5	8.2
Excess air	%	15%	15%	15%	25%
Flue gas recirculation (FGR)	%	30%	30%	30%	30%
Ambiant air & FGR flow	Lb/hr	64,795	48,838	32,920	18,439
Combustion air temperature	F	132.5	134.2	138.6	144.1
Boiler draft loss	In. w.c.	2.8	1.6	0.7	0.2
Econ draft loss	In. w.c.	0.3	0.2	0.1	0.0
Fuel flow	Lb/hr	2,884	2,174	1,465	756
Estimated Flue gas temp(6)	F	519	471	426	390
Estimated Flue gas temp at econo outlet(6)	F	298	305	323	347
Flue gas flow	Lb/hr	52,061	39,240	26,451	14,765
Release Rate	BTU/hr ft2	89,260	67,186	45,178	23,124
Liberation Rate	BTU/hr ft3	54,978	41,381	27,827	14,243

Physicals Data			Heating Surface		
Design pressure	Psig	500	EPRS	ft2	611.0
Thermal Fluid Connections	NPS	10	A. S. M. E.	ft2	679.0
Flooded Content	US gallon	936.0	Convective	ft2	3851.0
Unit Dry Weight	lb	60,500	Total Generator	ft2	4530.0
Thermal Fluid Weight At Ambient T	lb	7,808	Furnace Volume	ft3	992.0
Flooded Total Weight At Ambiant T	lb	68,308	Convection tube velocity	ft/s	4.4
Orifices quantity and diameter (in)	76	13/16	Furnace tube velocity	ft/s	4.4
Refractory floor	%	0%			

NOTES :
(1) Low flow cutout switch to be set at 801 USgpm (90% of Design Water Flow Rate as measured by inlet water flow meter).
(2) Fluid properties based on inlet water temperature to system.
(3) Maximum Manufacturer's recommended temperature is N/A F.
(4) Ambient air at 80% relative humidity.
(5) Includes 1.0 % manufacturer's margin, A.B.M.A. radiation losses and 0.0 % unaccounted loss.
(6) Flue gases dew point temperature is 129 F

By: A. Morian Rev 6a Date: 21-May-2010

INDECK Boiler Corporation 4300, Beaudry, St-Hyacinthe, Quebec, Canada, J2S 8A5 Phone: (450) 774-5326 Fax: (450) 774-3867

Exhibit E - Page 5

Confidential Information, to be seen by authorized personnel only

INDECK SPRING/FALL

Anticipated Performances Data For "International-Lamont" Hot Fluid Boiler

Project name: Newark Airport	Customer name: NY / NJ Port Authority	Ref# QU-00019523

Design conditions

Lamont size: 50	Min outlet pressure: 194.0 psig	Thermal Fluid Used: Water	
Fuel Fired: Std Natural Gas	Fuel HHV: 22,699 BTU/lb	Site Elevation: 100 FASL	Ambiant Air Temp: 80 F

With economizer		Firing Rate			
		100%	75%	50%	25%
Heat Output	MMBTU/hr	60.00	37.50	25.00	12.50
Heat Input	MMBTU/hr	60.15	45.35	30.59	15.81
Boiler Efficiency (HHV) (5)	%	83.1%	82.7%	81.7%	79.1%
Boiler Efficiency (LHV) (5)	%	93.3%	92.9%	92.0%	89.3%
Thermal Fluid Flow (1)(2)	USgpm	890 at inlet fluid conditions			
	Lb/hr	417,953	411,763	405,085	397,899
Thermal Fluid Outlet Temperature (3)	F	375.0			
Thermal Fluid Inlet Temperature	F	259.6	283.9	313.3	343.6
Thermal Fluid Pressure Drop in economizer	Psig	3.0	3.0	3.0	3.0
Thermal Fluid Pressure Drop in boiler	Psig	8.9	8.7	8.5	8.2
Excess air	%	15%	15%	15%	25%
Flue gas recirculation (FGR)	%	30%	30%	30%	30%
Ambiant air & FGR flow	Lb/hr	68,078	51,328	34,624	19,430
Combustion air temperature	F	132.0	133.7	138.0	143.6
Boiler draft loss	In. w.c.	3.2	1.8	0.9	0.3
Econ draft loss	In. w.c.	0.3	0.2	0.1	0.0
Fuel flow	Lb/hr	2,650	1,998	1,348	696
Estimated Flue gas temp(6)	F	501	457	416	386
Estimated Flue gas temp at econo outlet(6)	F	297	304	322	346
Flue gas flow	Lb/hr	64,406	41,020	27,670	15,482
Release Rate	BTU/hr ft2	89,711	67,642	45,446	23,295
Liberation Rate	BTU/hr ft3	55,255	41,601	27,991	14,348

Physicals Data			Heating Surface		
Design pressure	Psig	500	EPRS	ft2	611.0
Thermal Fluid Connections	NPS	10	A. S. M. E.	ft2	679.0
Flooded Content	US gallon	936.0	Convective	ft2	3851.0
Unit Dry Weight	lb	60,500	Total Generator	ft2	4530.0
Thermal Fluid Weight At Ambient T	lb	7,808	Furnace Volume	ft3	992.0
Flooded Total Weight At Ambiant T	lb	68,308	Convection tube velocity	ft/s	4.4
Orifices quantity and diameter (in)	76	13/16	Furnace tube velocity	ft/s	4.4
Refractory floor	%	0%			

NOTES :
(1) Low flow cutout switch to be set at 801 USgpm (90% of Design Water Flow Rate as measured by inlet water flow meter).
(2) Fluid properties based on inlet water temperature to system.
(3) Maximum Manufacturer's recommended temperature is N/A F.
(4) Ambient air at 60% relative humidity.
(5) Includes 1.0 % manufacturer's margin, A.B.M.A. radiation losses and 0.0 % unaccounted loss.
(6) Flue gases dew point temperature is 142 F

By: A. Morian Rev 6a Date: 21-May-2010

INDECK Boiler Corporation 4300, Beaudry, St-Hyacinthe, Quebec, Canada, J2S 8A5 Phone: (450) 774-5326 Fax: (450) 774-3887

Exhibit E – Page 6

From: Brian Richter [mailto:BRichter@indeck-power.com]
Sent: Thursday, June 03, 2010 5:05 PM
To: Richard Gorczynski
Subject: 60 mil btu HTHW item 0008254 minimum operating pressure Requested Revised data for boiler rental proposal-Newark Airport Project

Looks like 265 psi minimum pressure based on the those conditions. could temps change??

From: Adam Morian
Sent: Thursday, June 03, 2010 3:49 PM
To: Brian Richter
Cc: Terry Pawlowski IKE; Neil Bradwell IKE
Subject: RE: Requested Revised data for boiler rental proposal-Newark Airport Project

Brian,

This type of HTHW generator is more pressure sensitive than our Lamont line of HTHW generators. Given the construction of this HTHW generator and the operating conditions described, I do not recommend operating at 375°F outlet water temperature when provided with 205 psig inlet water pressure and 50 MMBTU/hr heating duty. Given a water flow rate of ~814GPM, a heating duty of 50MMBTU/hr, and an outlet temperature of 375°F, I recommend using a minimum inlet pressure of at least 265 psig for protection of the boiler. There is a significant risk of steaming internally and fouling tubes, which could cause tubes to overheat if this particular HTHW-G is only provided 205 psig in order to generate 375°F hot water.

In order to avoid the potential risk of fouling up tubes, we may want to ask the prospective end user if it is p possible to operate at a higher pressure, lower outlet temperature, and higher water flow rate.

Regards,

Adam Morian
Thermal Process Engineer

Indeck Keystone Energy, LLC

From: Terry Pawlowski IKE
Sent: Wednesday, June 02, 2010 8:46 AM
To: Adam Morian
Subject: FW: Requested Revised data for boiler rental proposal-Newark Airport ProjectFYI

10/6/2010

Exhibit F

Exhibit F - 001

From: Brian Richter
Sent: Tuesday, June 01, 2010 4:16 PM
To: Richard Gorczynski
Cc: Michael Kessler; Jim Gooch; Chris Petcos IKE; Terry Pawlowski IKE
Subject: RE: Requested Revised data for boiler rental proposal-Newark Airport Project

Ref: Zurn order # GO1450 NB # 19168

Richard
We can run at 375 F.
We can have a 50 million btu/hr output - boiler modulates.
As for pressure - I have a request into Terry Pawlowski for minimum operating pressure and I will get that info to you as soon as I get a response from Keystone.
Brian

From: Richard Gorczynski [mailto:rgorczynski@cgpowertech.com]
Sent: Tuesday, June 01, 2010 3:07 PM
To: Brian Richter
Cc: Mary Willets; Michael Kessler; Jim Gooch; Chris Petcos IKE
Subject: RE: Requested Revised data for boiler rental proposal-Newark Airport Project
Importance: High

Brian,

When can you get back to me regarding the change in pressure and temperature, GDS and the Port Authority would like to confirm that with these changes, there will be no problem with the rental boiler proposal Indeck submitted for this project.

When can you give us an answer?

Thank you

Richard Gorczynski
C.G. PowerTech Inc.

From: Richard Gorczynski
Sent: Tuesday, June 01, 2010 9:54 AM
To: 'Brian Richter'
Cc: 'Mary Willets'; 'Michael Kessler'; 'Jim Gooch'
Subject: RE: Requested Revised data for boiler rental proposal-Newark Airport Project
Importance: High

Brian,

Now with this project moving and being worked on. I am back on track for this information.

Also, there has been a request to change the working pressure and temperature for this rental boiler.

GDS would like to know if the rental boiler being offered can operate with a pressure of 205 PSIG at an output temperature of 375F and have a capacity of 50M BTUs.

Can you please verify this information for me?

Thank you

Richard Gorczynski

Exh. B.4 F — Page 2

Exhib.4- F- page 3

From: James Molina [mailto:jmolina@indeck-power.com]
Sent: Tuesday, June 08, 2010 5:55 PM
To: Laji George
Cc: Mark Chisom; PJ Panackal; rgorczynski@cgpowertech.com; David Smith; cnystrom@crc-eng.com; Greg Wassilkowsky
Subject: RE: Status Update?
Importance: High

Laji,

Attached are the letter and performance run requested.

As stated in the letter, without the final approval of the revised design due to the new site specific operating parameters, Indeck cannot proceed with the release of final design to our production plant which is delaying drawings and also material purchasing schedule.

I hope this helps clarify any concerns in order to continue to the next step of the project. Please let me know if you need Indeck to talk via conference with the Port Authority if further explanation is required.

Best Regards,

James Molina
Project Manager
Indeck Power Equipment
Phone (847) 541-8300
Cell (312) 331-0967
jmolina@indeck-power.com

Exhibit G
page 1

From: Laji George [mailto:LGeorge@GDSMechanical.com]
Sent: Friday, June 04, 2010 6:31 PM
To: James Molina
Cc: Mark Chisom; PJ Panackal; rgorczynski@cgpowertech.com; David Smith; cnystrom@crc-eng.com
Subject: RE: Status Update?

Jim,

Yes, please include the inlet pressure in the performance data sheet. Please have a response to us by Monday morning so that we can proceed to move ahead with the project.

Thank you,

Laji George
GDS Mechanical, Inc
Ph: 973-993-9199 Fax: 973-993-8444
lgeorge@gdsmechanical.com

-----Original Message-----
From: James Molina [mailto:jmolina@indeck-power.com]
Sent: Fri 6/4/2010 5:21 PM
To: Laji George
Cc: Mark Chisom; PJ Panackal; cnystrom@crc-eng.com; rgorczynski@cgpowertech.com; David Smith
Subject: RE: Status Update?

Laji,

I checked with Indeck's engineering department and they will include the inlet pressure in the performance runs if required. This does not change any of the results, as a matter of fact the report already shows the predicted pressure drop through the boiler and economizer.

In regards to the clarification letter in official letterhead format, the manager of my department will have to review it before I send it out, and he is not here at this moment, so I will send it next week together with the performances if required.

The letter will include the exact same information described in the attached previous email responses (attached). It is clear that based on the latest information, parameters and operating conditions provided by GDS and the Port Authority, Indeck does not have any concerns.

In order to clarify any doubts and advance to the next stage of our project I would like to propose a formal conference call meeting which will include GDS, Port Authority and Indeck. I will have Indeck's design engineer available to answer questions and clarify any concerns. As I mentioned before, I cannot complete Indeck's initial engineering design package without your approval and this has already impacted the schedule to provide you with drawings.

After this is resolved there are other items which need to be discussed in regards to specific engineering design that only occurs after a purchase order is created for the project. This is the typical procedure for our projects. I really would like to encourage you to try to establish an open communication line between us and the end user (conference call meetings) so we

Exhibit G – page 2

can avoid delays due to miscommunication.

I look forward to keep working with you for a successful project outcome.

Regards,

James Molina

From: Laji George [mailto:LGeorge@GDSMechanical.com]
Sent: Friday, June 04, 2010 2:40 PM
To: James Molina
Cc: Mark Chisom; PJ Panackal
Subject: RE: Status Update?

Jim,

Please let me know of the status of the request I sent to you via the email below.

Thank you,

Laji George
GDS Mechanical, Inc
Ph: 973-993-9199 Fax: 973-993-8444
lgeorge@gdsmechanical.com

-----Original Message-----
From: Laji George
Sent: Fri 6/4/2010 5:30 AM
To: James Molina
Cc: Mark Chisom; PJ Panackal
Subject: RE: Response to RFI#15 (clarified by RFI-2552-002)

Jim,

Is it possible to run the performance data with inlet pressures opposed to outlet. Since the inlet pressure is the one in question as per the RFI. Also, please comment on the potential STEAMING as well as FOULING (issues/non issue) for the Lamont 50 MMBTU/H generator at the available plant inlet pressure of 205 psig for both #2 fuel oil and Nat. gas. And please provide your comments on an Indeck letter head. This would be really helpful to move forward with the project. Call me on 973-223-

Exhibit G - page 3

4165 if you have any questions or if you need to discuss. If you can send this in the AM today it would be greatly appreciated.

Thank you,

Laji George
GDS Mechanical, Inc
Ph: 973-993-9199 Fax: 973-993-8444
lgeorge@gdsmechanical.com

-----Original Message-----
From: James Molina [mailto:jmolina@indeck-power.com]
Sent: Wed 6/2/2010 7:32 PM
To: Laji George
Cc: Mark Chisom; PJ Panackal; rgorczynski@cgpowertech.com; David Smith
Subject: RE: Response to RFI#15 (clarified by RFI-2552-002)

Laji,

Attached are the predicted performance runs correspondent to the design parameters specified on RFI#15.

#2 Fuel Oil Note : the minimum pressure @ outlet is listed as 203 psig (~215psig @ inlet), this is our recommendation if firing #2 Oil continuously. We believe there is no risk of tube side deposit problems when firing at 205psig inlet pressure for less than 10 days/year on #2 Oil.

Please let me know if you have any questions and if GDS and/or The Port Authority have any concerns in regards to Indeck's response to RFI #15. Indeck needs confirmation in order to proceed with the design modifications. Our engineered design package is on hold until we receive your approval.

Please also keep in mind that Indeck's fabrication/design department cannot proceed until I provide them the final engineered design package and this is affecting the drawings deliverable schedule.

Regards,

James Molina

Exhibit C-page 4

From: Laji George [mailto:LGeorge@GDSMechanical.com]
Sent: Wednesday, June 02, 2010 4:15 AM
To: James Molina
Cc: Mark Chisom; PJ Panackal; rgorczynski@cgpowertech.com; David Smith
Subject: RE: Response to RFI#15 (clarified by RFI-2552-002)

Jim,

Please provide performance data for Nat. Gas and #2 Fuel oil at the design parameters specified in RFI-15 to back up this letter.

Thank you,

Laji George
GDS Mechanical, Inc
Ph: 973-993-9199 Fax: 973-993-8444
lgeorge@gdsmechanical.com

-----Original Message-----
From: James Molina [mailto:jmolina@indeck-power.com]
Sent: Tue 6/1/2010 9:32 AM
To: Mark Chisom
Cc: Laji George; PJ Panackal; rgorczynski@cgpowertech.com; David Smith
Subject: Response to RFI#15 (clarified by RFI-2552-002)

Mark,

In response to RFI # 15 as further clarified by RFI-2552-002:

The performance requirements clarified in answer RFI #15 and RFI-2552-002 will supersede the range of design parameters and operating conditions of "Division 15, Section 15560, Addendum No.1, dated C 09/08/09" HTHW Generator Specification, as well as the design proposed in Indeck quotation QU00020463.

Minor changes need to be made in order to accommodate the performance requirements of RFI # 15. Specifically, the changes will accommodate the revised flow rate of 890 GPM at the HTHW generator water inlet. Once the HTHW generator design is modified to meet the revised conditions set forth in RFI #15, the generator will no longer meet the operating requirements previously specified and proposed.

Given that the HTHW generator will operate continuously firing natural gas and intermittently (10 day/year or less) firing No. 2 Oil with a inlet water flow of 890 GPM and an outlet water temperature of 375°F, Indeck recommends a steady-state inlet water pressure of at least 206 psig. It is stated in answer RFI #15, that operation during transients may cause the water inlet pressure to drop as low as 205 psig. Although operating pressure may drop below our recommended threshold during transients, it is our understanding that current site practices (including water chemistry control, operating procedures, HTHW generator duty loading, and system operation) have lead to long term successful operation of similar equipment in regard to water side fouling. Given the end user's successful track record in regards to minimal water side fouling of like equipment,

Exhibit G- page 5

Indeck has no legitimate reason to require a higher operating pressure in order to meet the requirements as clarified by RFI #15 and RFI-2552-002.

Regards,

From: Mark Chisom [mailto:MChisom@GDSMechanical.com]
Sent: Wednesday, May 19, 2010 3:18 PM
To: James Molina
Cc: Laji George; PJ Panackal
Subject: ewr-910.829

JIM

ATTACHED IS PORT AUTHORITY RESPONSE TO GDS RFI 15 SENT TO YOU UNDER SEPARATE COVER.; PLEASE HAVE YOUR ENGINEERS REVIEW AND PROVIDE INDECK COMMENT TO RFI RESPONSE. YOUR REPLY WILL BE NEEDED RIGHT AWAY.

Thank you,

Mark Chisom ? Project Coordinator

GDS Mechanical, Inc. ? HVAC + General Contractors

39 East Hanover Ave. ? Suite B1 ? Morris Plains, NJ 07950 ? p: 973.993.9199 ? f: 973.993.8444 ? c: 732.713.2169

mchisom@gdsmechanical.com

Exhibit G - Ann L

ATTENTION: 08:32:14 Tue 01 Jun 2010 Cette transmission électronique est strictement réservée à l'usage de dsmith@indeck-power.com, rgorczynski@cgpowertech.com, PJPanackal@GDSMechanical.com, LGeorge@GDSMechanical.com, MChisom@GDSMechanical.com et contient des informations privilégiées et confidentielles. Toute divulgation, distribution, copie, ou autre utilisation de cette transmission par une autre personne est strictement prohibée. Si vous avez reçu ce courriel par erreur, veuillez s'il vous plaît en aviser immédiatement l'expéditeur jmolina@indeck-power.com par courriel et détruire tout exemplaire ou copie de la transmission originale.

WARNING: 18:32:17 Wed 02 Jun 2010 This e-mail including attachments is covered by the Electronic Communications Privacy Act, 18 U.S.C. §§ 2510-2521. This electronic transmission contains confidential information, intended only for dsmith@indeck-power.com, rgorczynski@cgpowertech.com, PJPanackal@GDSMechanical.com, MChisom@GDSMechanical.com, LGeorge@GDSMechanical.com, and is privileged. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or any other use of this email is strictly prohibited. If you have received this transmission by error, please notify the sender jmolina@indeck-power.com immediately by return email and destroy the original transmission immediately and all copies thereof.

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INDECK

WARNING: 16:55:19 Tue 08 Jun 2010 This e-mail including attachments is covered by the Electronic Communications Privacy Act, 18 U.S.C. §§ 2510-2521. This electronic transmission contains confidential information, intended only for GWassilkowsky@indeck-power.com, cnystrom@crc-eng.com, dsmith@indeck-power.com, rgorczynski@cgpowertech.com, PJPanackal@GDSMechanical.com, MChisom@GDSMechanical.com, LGeorge@GDSMechanical.com, and is privileged. If you are not the intended recipient, you are

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Exhibit G - Page 1

CORPORATE OFFICE 1111 Willis Avenue • Wheeling, Illinois 60090-5841
TEL 847.541.8300 FAX 847.541.9984 WEB www.indeck.com
PLANT 4300 Beaudry • St-Hyacinthe, Quebec, Canada J2S 8A5

INDECK®
POWER EQUIPMENT COMPANY

June 8, 2010

Mr. Laji George
Project Manager
GDS Mechanical Inc.
Morris Plains, NJ 07950

Subject: Final Design Parameters Clarifications

References: Port Authority RFI #15 and Indeck RFI-2552-002

Dear Mr. George:

Indeck Power Equipment Company, ("Indeck") has completed the review and analysis of the new operating parameters as stated in Port Authority's RFI #15 response, (dated 05/19/10) and Indeck's Request for Information response RFI-2552-002, (dated 05/26/10).

The overall results show that only minor changes need to be made in order to accommodate the performance requirements of RFI # 15. The design takes into account the final and specific operating point required by the Port Authority and is reflected in the attached predicted performance run calculations (G2552_Gas_Oil_Performance_Rev.6b). Specifically, the changes will accommodate the revised flow rate of 890 GPM at the HTHW generator water inlet. Once the HTHW generator design is modified to meet the revised conditions set forth in RFI #15, the generator will no longer be able to meet the original operating requirements previously specified by the Port Authority and proposed in the Indeck's quotation QU00020463Rev.3. The minor design changes represent no additional cost in Indeck's proposal price. These modifications fall under typical engineering practices for site specific tuning that occur after a purchase order is created for the project. Nevertheless delaying the approval of the final operating conditions has a direct impact in Indeck's design/drafting schedule.

Given that the HTHW generator will operate continuously firing natural gas and intermittently (10 day/year or less) firing No. 2 Fuel Oil with a inlet water flow of 890 GPM and an outlet water temperature of 375°F, Indeck recommends a steady-state inlet water pressure of at least 206 psig. It is stated in answer RFI #15, that operation during transients may cause the water inlet pressure to drop as low as 205 psig. Although this operating pressure may drop below our recommended threshold (206 psig) during transients, it is our understanding that current site practices (including water chemistry control, operating procedures, HTHW generator duty loading, and system operation) have lead to long term successful operation of similar equipment in regard to water side fouling. Given the end user's successful track record in regards to minimal water side fouling of like equipment, Indeck has no legitimate reason to require a higher operating pressure in order to meet the requirements as clarified by RFI #15 and RFI-2552-002.

P

Exh. 6.4 G - pg. 9

CORPORATE OFFICE 1111 Willis Avenue • Wheeling, Illinois 60090-5841
TEL 847.541.8300 FAX 847.541.8984 WEB www.indeck.com

PLANT 4300 Beaudry • St-Hyacinthe, Quebec, Canada J2S 8A5

INDECK®
POWER EQUIPMENT COMPANY

Should in the future the Port Authority elect to fire #2 Fuel Oil on a more regular basis we would recommend increasing the system water pressure to the boiler inlet/outlet pressures at or above as 214.9/203 psig, respectively.

Sincerely,

James Molina
Project Manager
Indeck Power Equipment Company

Attachment

CC: Greg Wassilkowsky
Dave Smith
Richard Gorczynski
Chris Nystrom

INDECK

Anticipated Performances Data For "International-Lamont" Hot Fluid Boiler

Project name: Newark Airport	Customer name: NY / NJ Port Authority	Ref # QU-00019523

Design conditions

Lamont size: 60	Min Pressure in/out: 205.9 / 194.0 psig	Thermal Fluid Used: Water	
Fuel Fired: Std Natural Gas	Fuel HHV: 22,699 BTU/lb	Site Elevation: 100 FASL	Ambiant Air Temp: 80 F

With economizer		Firing Rate			
		100%	75%	50%	25%
Heat Output	MMBTU/hr	50.00	37.50	25.00	12.50
Heat Input	MMBTU/hr	60.15	46.35	30.59	15.81
Boiler Efficiency (HHV) (5)	%	83.1%	82.7%	81.7%	79.1%
Boiler Efficiency (LHV) (5)	%	93.3%	92.9%	92.0%	89.3%
Thermal Fluid Flow (1)(2)	USgpm	890 at inlet fluid conditions			
	Lb/hr	417,953	411,763	405,085	397,899
Thermal Fluid Outlet Temperature (3)	F	375.0			
Thermal Fluid Inlet Temperature	F	259.6	283.9	313.3	343.6
Thermal Fluid Pressure Drop in economizer	Psig	3.0	3.0	3.0	3.0
Thermal Fluid Pressure Drop in boiler	Psig	8.9	8.7	8.5	8.2
Excess air	%	15%	15%	15%	25%
Flue gas recirculation (FGR)	%	30%	30%	30%	30%
Ambiant air & FGR flow	Lb/hr	68,078	51,328	34,624	19,430
Combustion air temperature	F	132.0	133.7	138.0	143.6
Boiler draft loss	In. w.c.	3.2	1.8	0.9	0.3
Econ draft loss	In. w.c.	0.3	0.2	0.1	0.0
Fuel flow	Lb/hr	2,650	1,998	1,348	696
Estimated Flue gas temp(6)	F	501	457	416	386
Estimated Flue gas temp at econo outlet(6)	F	297	304	322	346
Flue gas flow	Lb/hr	54,406	41,020	27,670	15,482
Release Rate	BTU/hr ft2	89,711	67,642	45,446	23,295
Liberation Rate	BTU/hr ft3	55,255	41,601	27,991	14,348

Physicals Data			Heating Surface		
Design pressure	Psig	500	EPRS	ft2	611.0
Thermal Fluid Connections	NPS	10	A. S. M. E.	ft2	679.0
Flooded Content	US gallon	936.0	Convective	ft2	3851.0
Unit Dry Weight	lb	60,500	Total Generator	ft2	4530.0
Thermal Fluid Weight At Ambient T	lb	7,808	Furnace Volume	ft3	992.0
Flooded Total Weight At Ambiant T	lb	68,308	Convection tube velocity	ft/s	4.4
Orifices quantity and diameter (in)	76	13/16	Furnace tube velocity	ft/s	4.4
Refractory floor	%	0%			

NOTES :
(1) Low flow cutout switch to be set at 801 USgpm (90% of Design Water Flow Rate as measured by inlet water flow meter).
(2) Fluid properties based on inlet water temperature to system.
(3) Maximum Manufacturer's recommended temperature is N/A F.
(4) Ambient air at 60% relative humidity.
(5) Includes 1.0 % manufacturer's margin, A.B.M.A. radiation losses and 0.0 % unaccounted loss.
(6) Flue gases dew point temperature is 142 F

By: A. Morian / Rev 6a Date: 7-Jun-2010

INDECK Boiler Corporation 4300, Beaudry, St-Hyacinthe, Quebec, Canada, J2S 8A5 Phone: (450) 774-5326 Fax: (450) 774-3887

Exhibit G - page 11

INDECK

Anticipated Performances Data For "International-Lamont" Hot Fluid Boiler

Project name: Newark Airport	Customer name: NY / NJ Port Authority	Ref # QU-00019523

Design conditions

Lamont size: 50	Min Pressure in/out: 214.9 / 203.0 psig	Thermal Fluid Used: Water	
Fuel Fired: Std #2 Oil	Fuel HHV: 19,882 BTU/lb	Site Elevation: 100 FASL	Ambiant Air Temp: 80 F

With economizer		Firing Rate			
		100%	75%	50%	25%
Heat Output	MMBTU/hr	50.00	37.50	25.00	12.50
Heat Input	MMBTU/hr	57.34	43.22	29.13	15.03
Boiler Efficiency (HHV) (5)	%	87.2%	86.8%	85.8%	83.2%
Boiler Efficiency (LHV) (5)	%	93.3%	92.9%	91.9%	89.3%
Thermal Fluid Flow (1)(2)	USgpm	890 at inlet fluid conditions			
	Lb/hr	417,953	411,763	405,085	397,899
Thermal Fluid Outlet Temperature (3)	F	375.0			
Thermal Fluid Inlet Temperature	F	259.6	283.9	313.3	343.6
Thermal Fluid Pressure Drop in economizer	Psig	3.0	3.0	3.0	3.0
Thermal Fluid Pressure Drop in boiler	Psig	8.9	8.7	8.5	8.2
Excess air	%	15%	15%	15%	25%
Flue gas recirculation (FGR)	%	30%	30%	30%	30%
Ambiant air & FGR flow	Lb/hr	64,795	48,838	32,920	18,439
Combustion air temperature	F	132.5	134.2	138.6	144.1
Boiler draft loss	in. w.c.	2.8	1.6	0.7	0.2
Econ draft loss	in. w.c.	0.3	0.2	0.1	0.0
Fuel flow	Lb/hr	2,884	2,174	1,465	756
Estimated Flue gas temp(6)	F	519	471	426	390
Estimated Flue gas temp at econo outlet(6)	F	298	305	323	347
Flue gas flow	Lb/hr	52,061	39,240	26,451	14,765
Release Rate	BTU/hr ft2	89,260	67,186	45,178	23,124
Liberation Rate	BTU/hr ft3	54,978	41,381	27,827	14,243

Physicals Data			Heating Surface		
Design pressure	Psig	500	EPRS	ft2	611.0
Thermal Fluid Connections	NPS	10	A. S. M. E.	ft2	679.0
Flooded Content	US gallon	936.0	Convective	ft2	3851.0
Unit Dry Weight	lb	60,500	Total Generator	ft2	4530.0
Thermal Fluid Weight At Ambient T	lb	7,808	Furnace Volume	ft3	992.0
Flooded Total Weight At Ambiant T	lb	68,308	Convection tube velocity	ft/s	4.4
Orifices quantity and diameter (in)	76	13/16	Furnace tube velocity	ft/s	4.4
Refractory floor	%	0%			

NOTES :
(1) Low flow cutout switch to be set at 801 USgpm (90% of Design Water Flow Rate as measured by inlet water flow meter).
(2) Fluid properties based on inlet water temperature to system.
(3) Maximum Manufacturer's recommended temperature is N/A F.
(4) Ambient air at 60% relative humidity.
(5) Includes 1.0 % manufacturer's margin, A.B.M.A. radiation losses and 0.0 % unaccounted loss.
(6) Flue gases dew point temperature is 129 F

By: A. Morian Rev 6b / Date: 7-Jun-2010

INDECK Boiler Corporation 4300, Beaudry, St-Hyacinthe, Quebec, Canada, J2S 8A5 Phone: (450) 774-5326 Fax: (450) 774-3887

Exhibit G - page 12

Colvin Engineering Associates, Inc.
HIGH PERFORMANCE DESIGN

August 17, 2010

PJ Panackal
GDS Mechanical Inc.
39 East Hanover Ave. Ste. B1
Morris Plains, NJ 07950

RE: Newark Liberty Airport – Contract EWR 910.829
Changes to the Temporary HTHW Generator Design Criterion

Dear PJ:

The following is a brief enumeration of relevant changes to the Temporary HTHW Generator design criterion to date:

1. There is no specification for the Temporary HTHW Generator. Note 3 on drawing M201 states that it is "designed and installed by the contractor".

2. Without any contractual obligation, but in an effort to have further guidance, it was decided to pattern the performance for the temporary generator after that specified for the permanent generators in specification Section 15560.

3. Specification Section 15560 paragraph 2.03 H HTHW Generator Design Parameters states:

Output	50,000,000 btu/hr
Design Pressure	500 psig @ 470 °F
Operating Pressure	300 psig @ 400 °F
Primary Condition	
Inlet Water Temperature	300 °F
Outlet water Temperature	400 °F
Flow Rate	1,064 gpm
Alternate Condition	
Inlet Water Temperature	264 °F
Outlet water Temperature	400 °F
Flow Rate	730 gpm

4. Notice to Bidders dated 17 SEP 2009 included the following:

Minimum Inlet Pressure	353 psig
Inlet Water Temperature	260 °F
Outlet water Temperature	400 °F
Flow Rate	759.6 gpm

5. Request for Information Number 12 dated 25 MAR 2010:

   Questioned difference between Section 15560 and Notice to Bidders for minimum, normal and maximum operating pressures.

HVAC / Energy Efficient Solutions / CHP Modeling / Air Pollution Control
244 West 300 North, Suite 200 / Salt Lake City, Utah 84103-1147 / 801.322.2400 / FAX 801.322.2416

Exhibit H-Paul

The response dated 26 MAR 2010 stated that return temperatures would range between 260°F to 300°F and that supply temperatures would range from 300°F to 400°F. The existing pump curve was attached which showed the normal operating condition of 895 gpm at 66.7 ft of head (29 psi).

At this point we would like to limit this letter to the spring/fall conditions which have the lowest inlet pressure to the generator. This is the critical condition which must be considered to prevent boiling in the generator. The winter conditions can easily be satisfied if the spring/fall conditions are met.

Flow diagrams were also attached for mid winter and for spring/fall conditions. The spring/fall inlet conditions for the generator are shown as 330°F and 215 psig.

Note that the written response did not answer the questions directly but made reference to a flow diagram that appears to have questionable data. The existing pump is shown to provide 40 psi but the pump curve shows 29 psi. This would only provide an inlet pressure of 204 psig instead of the 215 psig shown.

6. Chris Nystrom e-mail to Laji George dated 6 MAY 2010 states:

   Maintain Flow at 800 gpm
   Maximum supply temperature is 375°F
   Design inlet pressure is 50 psi above supply saturation pressure (i.e. 215 psig).
   Outlet temperature and flow remain constant.

7. Request for Information Number 15 dated 13 MAY 2010:

   Requested confirmation of the operating conditions for the generators.

   The response added a 5% safety factor and gave the following operating conditions:

Flow (constant)	890 gpm
Generator inlet pressure	205 psig
Generator inlet temperature range	270 – 330°F
Generator supply temperature	375°F
Approximate output Capacity	50 MMBTU

8. There have been requests for information and responses concerning the design conditions for the Temporary HTHW generator. There have been multiple submissions and review comments. The responses have not been consistent with the original contract documents or previous responses. This is understandable because the design was by contract left to the contractor with no initial criterion but has been developed by the Port Authority during the submittal process.

   With each additional requirement or change the Temporary HTHW Generator design has been updated to comply. This letter does not address the burner or other issues that were taken care of once the criterion was set. This letter only addresses the minimum operating pressure which has had significant impact on the generator design.

   In summary the minimum generator inlet pressures are stated as:

Specified in Section 15560	300 psig
Notice to Bidders 17 SEP 2009	353 psig
Request for Information 12 - 25 MAR 2010	215 psig
Request for Information 15 - 13 MAY 2010	205 psig

HVAC / Energy Efficient Solutions / CFD Modeling / Air Pollution Control
244 West 300 North, Suite 200 / Salt Lake City, Utah 84103-1147 / 801.322.2400 / FAX 801.322.2416

Exhibit H- page 2

With the specified minimum inlet pressures in the specification and the Notice to Bidders the temporary generator did not need a booster pump. With the reduced pressure in the RFI 12 response a pump is needed. A larger pump is needed to comply with the response to RFI 15.

If correction is made to the flow diagram in RFI 12 for the actual pump pressure of 29 psi and a 5% safety factor is applied the inlet pressure might be as low as 194 psig. This will require an even larger pump for the temporary generator. The existing generators and the specified permanent generators will also need booster pumps for this condition. Possibly the Port Authority should reconsider the operating conditions to accommodate the existing and proposed generators.

9. Each of these changes in design conditions has required time and effort for redesign. The additional cost for redesign, booster pumps, wiring and controls could not have been anticipated based on the original contract documents. Even though the design is noted to be 'designed by the contractor', it has been changed by the Port Authority over the course of several months.

10. In addition to the changes, the approval process has been slowed by the request of the Port Authority to include the piping, stress analysis, supports, auxiliary piping, electrical connections, temporary generator building and stack as part of the submittal package. These additional related items will be submitted but are not needed for approval and release of the generator. The lead time for the delivery of the temporary generator is longer than any of the supporting systems and equipment. The efforts of GDS and the Port Authority should focus on the critical path items first and not be distracted by the other items.

We can be available to answer any questions that the Port Authority may have concerning our response to their comments.

Sincerely,

Frederick N. Broberg, P.E. LEED AP
Senior Project Manager

I:/Projects/2010 Projects/2010-059.00 Newark Liberty Airport/generator changes.docx

-----Original Message-----
From: James Molina [mailto:jmolina@indeck-power.com]
Sent: Monday, July 12, 2010 6:26 PM
To: Laji George; PJ Panackal; Mark Chisom
Cc: Chris Nystrom; Adam Morian; David Smith; rgorczynski@cgpowertech.com; Greg Wassilkowsky; Gary Blazek IKE; Martin Lenick
Subject: G-2552 Newark Airport Clarifications (60% Complete GA and Design)
Importance: High

Laji,

I am attaching a 60% complete General Arrangement drawing for the TWJC-50 HTHW Generator to be provided by Indeck for the specific Newark Airport project. Although this drawing is not completed, it has enough information for GDS and the Port Authority to review overall dimensions and to identify Indeck's equipment, ductwork and piping arrangements, for GDS to start coordinating the design of all other systems in the plant.

In order to complete Indeck's job specific design and also finalize the GA drawing, Indeck requires GDS and the Port Authority to clarify, acknowledge or respond to the following list of questions, recommendations or discrepancies between Indeck's Proposal QU00020463 Rev.3 and the Customer's Specification Division 15 Section 15560C (09/08/09):

1) The proposal indicates that burners for two out of four HTHW Generators will be shipped loose for field installation by others; P.O. # GDS-P-801A describes the HTHW Generators as Unit #3 and Unit #4. Please advise if these units shall be shipped with the burners mounted or shipped loose for field installation.

2) Access Platforms were not specified therefore were not included in the Proposal/P.O. However, some Port Authority drawings for this project show access platforms which are specifically design for this plant and differ from our standard design. Indeck's scope does not include platforms of any type. Please confirm.

Exhibit I
page 1

3) An air preheater is shown on Indeck's preliminary GA in the proposal. This preheater was not specified and also not included in the proposal/P.O.
The use of this auxiliary equipment is typically recommended by Indeck depending on severe low temperature air intake conditions. This option was eliminated by the Port Authority during the proposal stage of this project. Indeck's scope of work for the combustion air side ends at the Fan Silencer inlet flange and does not include any structural steel supports or duct breaching to the air intake louvers. Please confirm.

4) According to GDS' response to RFI-2552-2, No. 2 Fuel Oil will be used less than 200 hours per year. Considering limited No. 2 Oil firing, Indeck does not foresee a need for sootblowers. Please advise if the the customer still desires sootblowers even though No. 2 Fuel Oil firing is limited.

5) During the site specific design phase it has been determined that, due to the final design parameters clarified in RFI-2552-2 and the site height restrictions, the economizer fins must be serrated and not solid (as preliminary described in the proposal) in order to maintain the proposed economizer height.
Based on the limited amount of No.2 Fuel Oil firing Indeck recommends this modification and does not foresee any problems. Please acknowledge and approve this design change.

6) There is a discrepancy between the number of casing temperature sensors required per the specification and the number offered in the proposal. Indeck's proposal offers a total of 12 sensors per unit. If the customer requires more sensors per unit this will be treated as a design change order. Please advise.

7) The specification requires the temperature sensors to be embedded between the furnace tubes and the casing. Installation of temperature sensors on the inside of the seal casing may compromise the lifetime integrity of the gas tight seal. Indeck recommends and states in the Proposal the installation of the temperature sensors on the outside surface of the inner casing in order to avoid unnecessary casing penetrations, an unnecessary risk to the seal integrity. Please acknowledge this design and also provide recommendations or requirements for the locations of the sensors.

8) The specification requests an adequate number of observation ports. Indeck recommends and provides a maximum of three (3) ports for the visual inspection of firing conditions; one (1) at the furnace and two (2) at the burner. Indeck believes there is a higher risk of casing failure by increasing the total number of observation ports. Each observation port requires the use of refractory and cooling air in order to protect the seal casing and observation port from hot furnace gases. The casing seal could potentially burn through if there is a failure in the cooling air system or if the insulating refractory disintegrates enough to fall in protecting the metal observation port and the seal casing from the furnace heat. The refractory which lines the observation ports will need routine inspections and maintenance in order to provide long term protection to the seal casing. Each added observation port not only increases inspection and maintenance requirements, but also increases the number of potential failure points of the design. This will increase the likelihood of encountering a casing failure during the life of the HTHW-G. Indeck recommends having the minimum number of observation ports required by the burner supplier for visual inspection and burner tuning. Indeck does not see any value added by increasing the number of observation ports over our standard design.

Exhibit I. page 2

If more than three (3) observation ports are required the customer shall provide more information in regards to the needs, locations, and purpose of the ports. This is not typical of Indeck's standard design and shall be handled as a design change order if still required. Please advise.

9) While the site specific burner and fan designs were being finalized, RFI # 15 requested new operating conditions which would have the same burner duty but would allow the customer to operate at a lower HTHW-G inlet pressure. Typically it works to the end user's advantage to operate with reduced FGR (smaller fan\ducting\power requirements), however in this instance, decreasing the FGR rates would cause concern for operation at the lower inlet pressure requested by RFI # 15. The ideal solution would be to operate the boiler at a higher inlet water pressure; however this does not appear to be a possibility at this site. The end result is that we need to have a larger fan and FGR duct in order to satisfy the end user requirements requested by RFI #15. This increase has caused the FGR Duct/Burner/FD Fan to increase in size and possibly the Motor to go from 50 to 75 HP. The price impact of these changes are being calculated and will be forwarded to GDS as a Design Change Order. Please acknowledge this change and advise if you have any concerns.

10) The HTHW-G standard trim and controls are based on fixed outlet temperature. The final operating parameters presented on RFI-2552-2 imply that the outlet temperature would be constant at 375 F. Please confirm.

11) The customer specification requires the HTHW-G to have approved water side man access openings no smaller than 11" x 16" for cleaning and inspection. Man access to the water side is not necessary nor included on the Lamont design. It appears that this requirement is for other type of equipment (packaged boilers). Please advise if the customer has any concerns.

12) Customer's specification requires 2.5 inches of refractory between the furnace wall tubes and the casing. Indeck's standard as described in the proposal is 1" compressed ceramic wool between the tangent tube furnace wall and the inner seal casing. In addition, there is 3 inches of mineral wool between the seal casing and the corrugated aluminum outer casing in order to maintain external surface temperatures below 140°F. Please advise if the customer has any concerns.

13) Customer's specification requires the economizer to be equipped with controls appropriate for limiting condensation of flue gasses. In the case of >=260°F inlet water temperature, condensation would not occur in the economizer. Per the information provided in RFI #15 and RFI-2552-2 Indeck understands that the inlet temperature range is 270-330 F. Based on this information Indeck concludes that no controls are required to prevent flue gas condensation. Please confirm or let us know if you have any concerns.

14) Per Indeck's proposal the Z-pipe requires field fit for installation by others. Please be aware that field fit includes code welding by an approved ASME stamp holder contractor. Typically one or two flanges are field fitted.

15) Customer's specification discusses the use of electric/mechanical actuators for damper positioning. Indeck's proposed and recommended actuators are electro-pneumatic. Also, our FGR

Exhibit I – Page 3

and Flue Gas dampers are of the Butterfly type. Please advise if the customer has any concerns. If electro-mechanical actuators are still required this will be subject to a design change order...

16) Appendix B (Ref #1 of Division 15 Section 15560C) lists a maximum gross heat input <= 50 MMBTU/hr (HHV), however our expectation is 60.15 MMBTU/hr heat input (HHV) for 100% load and 50 MMBTU/hr output. Does this discrepancy cause a problem?

Please provide your answers and concerns no later than Monday 07/19/10.

Note:
I will out of the office on personal time from 07/13/10 to 07/16/10 and will be back on Monday 07/19/10 to follow up on any questions or concerns.

Best Regards,

James Molina
Project Manager
Indeck Power Equipment

Exhibit I - page 4

power.com, rgorczynski@cgpowertech.com, dsmith@indeck-power.com, amorian@indeck-keystone.com, cnystrom@crc-eng.com, MChisom@GDSMechanical.com, PJPanackal@GDSMechanical.com, LGeorge@GDSMechanical.com et contient des informations privilégiées et confidentielles. Toute divulgation, distribution, copie, ou autre utilisation de cette transmission par une autre personne est strictement prohibée. Si vous avez reçu ce courriel par erreur, veuillez s'il vous plaît en aviser immédiatement l'expéditeur jmolina@indeck-power.com par courriel et détruire tout exemplaire ou copie de la transmission originale.

Exhibit I - Page 5

From: James Molina [mailto:jmolina@indeck-power.com]
Sent: Tuesday, August 10, 2010 5:17 PM
To: Mark Chisom
Cc: Laji George
Subject: RE: Newark Airport - INDECK Status Update
Importance: High

Mark,

In regards to the Port Authority's comment item #9, the equipment affected is described in Change Order Request G-2552-001. Please be aware that Indeck needs this approval in order to finalize the purchase process of the correct auxiliary equipment. I just spoke with the burner and fan vendor and this delay has affected the dates for his submittals to Indeck; delay that gets transferred to my submittals to GDS and subsequently to the equipment delivery.

All of our vendors and also our fabrication facility have been working with us to maintain the original delivery schedule offered, but this is always subject to change based on their actual workload at the time I officially give them the orders to proceed; which have been respectively on hold based on the series of clarifications required up to this date.

I am proceeding with all the outstanding items that have been clarified in the answers provided by the Port Authority, but I still need the change order approval to proceed with the burner/fan procurement and provide you with an updated project schedule.

Do not hesitate to contact me should you need additional information or if you have any concerns. Indeck is eager to continue working with you for a successful project completion.

Regards,

James Molina
Project Manager
Indeck Power Equipment
Phone (847) 541-8300
jmolina@indeck-power.com

10/6/2010

Exhibit J
page 1

From: Mark Chisom [mailto:MChisom@GDSMechanical.com]
Sent: Tuesday, August 10, 2010 1:06 PM
To: James Molina
Cc: Laji George
Subject: FW: Newark Airport - INDECK Status Update

JAMES
PLS REFER TO ATTACHEMNT FROM PORT AUTHORITY.GDS ANSWERS WILL FOLOOW SHORTLY. IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT ME OR LAJI GEORGE. PLEASE ADVISE WHEN WE CAN EXPECT YOUR SUBMITTALS. PLEASE ADVISE BY THURSDAY, AUGUST 12, 2010.
MARK CHISOM

From: Wallace, Michael [mailto:mcwallac@panynj.gov]
Sent: Friday, August 06, 2010 10:57 AM
To: Laji George
Cc: PJ Panackal; Mark Chisom; Pietrocola, Dennis; York, Anthony; Hogan, Kevin; Palleija, Irene; Smolar, Kelly; Chris Nystrom; Schnurr, Richard
Subject: RE: Newark Airport - INDECK Status Update

Gentlemen,

Attached find the Port Authority's responses to RFI 18. Some of the questions state "GDS required coordination" which means as the GC, you should be answering these questions with Indeck since it is in your scope of work of the Contract.

In addition, please advise Indeck that I do not want to see any further RFIs without receipt of the shop drawings that have been promised to me ***numerous*** times. Many of the questions listed in the RFI would have been answered or responded to during the shop drawing review process. This job needs to show some forward progress which is sorely lacking and this responsibility solely rests with GDS.

Please confirm the delivery date for the shop drawings and advise this office ASAP.

Michael C. Wallace, P.E. LEED AP
Senior Resident Engineer
Newark Liberty International Airport - CTA
(973) 622-0800 x 251(Building 125)
(973) 622-0172 FAX
(973) 390-5519 Cell
E-mail: mcwallac@panynj.gov

From: Laji George [mailto:LGeorge@GDSMechanical.com]
Sent: Friday, August 06, 2010 5:05 AM
To: Wallace, Michael
Cc: PJ Panackal; Mark Chisom
Subject: FW: Newark Airport - INDECK Status Update
Importance: High

Exhibit J- page 2

Mike,

Please review email below from Indeck and provide us with a status on their request.

Thank you,

Laji George
GDS Mechanical, Inc
Ph: 973-993-9199 Fax: 973-993-8444
lgeorge@gdsmechanical.com

-----Original Message-----
From: James Molina [mailto:jmolina@indeck-power.com]
Sent: Thu 8/5/2010 3:18 PM
To: Laji George
Cc: PJ Panackal; David Smith; Greg Wassilkowsky
Subject: RE: Newark Airport - Status Update

Laji,

Please provide a status update on the change order request # G-2552-001
and also on the list of clarifications sent several weeks ago.

Thank you.

James Molina

Project Manager

Indeck Power Equipment

Phone (847) 541-8300

jmolina@indeck-power.com

From: James Molina
Sent: Monday, July 26, 2010 5:52 PM
To: 'Laji George'
Cc: PJ Panackal; David Smith; Greg Wassilkowsky
Subject: RE: Newark Airport - Status Update
Importance: High

Laji,

Exhibit J- page 3

Per our conversation, and in accordance to item #9 of the clarifications email sent on 7/12/10, I'm attaching change order request # G-2552 for your review and approval.

The completion of the GA drawings and overall project depend on the approval of this request.

Please do not hesitate to contact me should you have any questions.

Regards,

James Molina

Project Manager

Indeck Power Equipment

Phone (847) 541-8300

Cell (312) 331-0967

jmolina@indeck-power.com

Exhibit J - page 6

NOTICE: THIS E-MAIL AND ANY ATTACHMENTS CONTAIN INFORMATION FROM THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY AND AFFILIATES. IF YOU BELIEVE YOU HAVE RECEIVED THIS E-MAIL IN ERROR, PLEASE NOTIFY THE SENDER IMMEDIATELY, PERMANENTLY DELETE THIS E-MAIL (ALONG WITH ANY ATTACHMENTS), AND DESTROY ANY PRINTOUTS.

INDECK

From: James Molina [mailto:jmolina@indeck-power.com]
Sent: Wednesday, September 01, 2010 5:32 PM
To: Laji George
Cc: PJ Panackal; David Smith; Greg Wassilkowsky; Mark Chisom; Chris Nystrom; ayork@panynj.gov; rgorczynski@cgpowertech.com
Subject: RE: Change Order Request G-2552-001-Purchase Order
Importance: High

Laji,

The P.O. provided by GDS for our Change Order Request G-2552-001 cannot be subject to any provisions or conditions. Indeck cannot accept this P.O. unless the conditions: *"Review and approval of the submittals by the Port Authority"* are removed.

If GDS needs further explanation for the change I will forward, per your request, the necessary information by 9/3/10. However, I am also available to provide further explanation via conference call with GDS, the Port Authority and Indeck's Engineering department.

Nevertheless, I agree that we should meet with Port Authority at this point in order to clarify any issues pending and move forward with our project. I checked with the assigned engineer for this project and we are available to travel and meet with you on Friday September, 10 2010.

Please confirm the meeting no later than 9/3/10 afternoon so we can make travel arrangements.

Regards,

James Molina
Project Manager
Indeck Power Equipment
Phone (847) 541-8300
jmolina@indeck-power.com

From: Laji George [mailto:LGeorge@GDSMechanical.com]
Sent: Wednesday, September 01, 2010 12:07 PM

Exhibit K
page 1

To: James Molina
Cc: PJ Panackal; David Smith; Greg Wassilkowsky; Mark Chisom
Subject: RE: Change Order Request G-2552-001-Purchase Order

James,

Attached is the signed Purchase Order for the change order request # G2552-001. Please proceed in getting us a full submittal for the HTHW generators.

Also, please provide us a letter explaining the parameters that changed from the specifications and the sole source proposal that has resulted in this change order(I have attached the Sole source proposal and the spec section for HTHW generators for your use). We need this for our records. Please provide this by end of business day 9/3/2010. Feel free to call me on 973-223-4165 or email me if you have any questions regarding this.

Thank you,

Laji George
GDS Mechanical, Inc
Ph: 973-993-9199 Fax: 973-993-8444
lgeorge@gdsmechanical.com

INDECK

Exhibit K - page 2

INDECK

Recommended Water Quality Limits for Hot Water Boilers *

Hardness as ppm CaCO3 (Note 1)	PH	Residual Sulphite as ppm Na2SO3	P-Alkalinity as ppm CaCO3 (Note 2)	M-Alkalinity as ppm CaCO3 (Note 3)	Chlorides ppm NaCl (Note 4)	Ammonia as ppm NH3 (Note 5)	Conductivity µS/cm at 25deg.C	Suspended Solids (ppm)	Oily and Greasy Matter (ppm)	Copper (ppm)	Iron (ppm)	Zinc (ppm)	Total Bacteria Count (cells/ml) (Note 6)
<5	9.5 - 10.0	15 to 30	as req'd	100 to 400	<100	<7	<2000	20 to 40	10 to 20	<0.02	<0.02	0	100 to 1000

* Limits represent reasonably achievable levels to limit water side corrosion and surface deposits. Indeck equipment warranty excludes claims resulting from corrosion and/or deposits. It is owner/operators responsibility in conjunction with a qualified water treatment specialist to maintain appropriate water chemistry in the unit at all times.

1. Initial system fill should utilize softened water with a hardness <2 ppm with sufficient TDS to buffer solution against PH change. To control oxygen concentrations in the circulating water a sodium sulfite solution (NaSO3) should be added as an oxygen scavenger until a residual of 30 ppm is maintained. As system is heated, additional sodium sulphite additions will be required due to its reaction with oxygen.
2. P-Alkalinity should be adjusted to maintain the PH within target range. Its concentration will normally be approximately 10% of the total alkalinity level.
3. This "total" alkalinity will reach equilibrium when the required PH is range is reached.
4. Excessive chloride ions are potentially corrosive and may indicate a malfunction of the softener system.
5. Ammonia is a byproduct of bacterial activity and any increase in this level may require the addition of a biocide to prevent fouling of the system.
6. Elimination of dead pockets, maintaining system PH at 9.0, and water temperature above 160 deg.F will inhibit bacterial growth.

Exhibit K - page 3

From: James Molina [mailto:jmolina@indeck-power.com]
Sent: Friday, September 03, 2010 5:39 PM
To: Laji George
Cc: Mark Chisom; Adam Morlan; David Smith; Greg Wassilkowsky
Subject: RE: Change Order Request G-2552-001-Purchase Order

Laji,

The Port Authority Specification 15560 describes system operating conditions and on page 2 as follows:

Operating Pressure	400psig, maximum
Normal Supply Temp Range	325-400 F
Normal Return Temp Range	250-300 F

The Port Authority Specification 15560 also describes Design Parameters on page 7 as follows:

Operating Pressure: 300 psig @ 400 F

Primary Conditions	
Inlet Water Temperature:	300 F
Outlet Water Temperature:	400 F
Flow Rate:	1,064 GPM

Alternate Conditions	
Inlet Water Temperature:	254 F
Outlet Water Temperature:	400 F
Flow Rate:	730 GPM

The sole source proposal presented by Indeck was based on the above information and also several iterations with the port authority's engineering department and states the design parameters on page 7 as follows:

Minimum Inlet Pressure:	353 psig
Inlet Water Temperature:	260 F
Outlet Water Temperature:	400 F
Flow Rate:	759.6 GPM

10/6/2010

Exhibit L
page 1

These parameters were used by Indeck's engineering department to calculate predicted performances and generate design data for the Burner/Fan Vendor to size and select the adequate and most cost efficient Burner/Fan for the end user considering that it must provide guaranteed emissions.
The burner selected based on these conditions had a requirement of 10% FGR when firing gas and 15% when firing fuel oil, As stated on page 13 of the proposal.
The fan sized for this burner required a 50 HP motor which is stated on page 15 of our proposal.

After our kick-off meeting I requested GDS to provide final operating conditions which were confirmed through RFI-15 and RFI-2552-002. This information was used by Indeck's engineering department to perform the specific engineering phase of the project, which determined that minor internal modifications needed to be done in order to guarantee the boiler performance. These minor internal design changes to the generator did not reflect any price increase to Indeck's proposal price.

The final predicted performance was also forwarded to Indeck's Burner/Fan vendor to confirm the proposed Burner/Fan selection will meet the updated requirements. Unfortunately, our vendor had to increase the Burner/Fan and Motor sizes in order to accommodate the new requirement of 30% FGR when firing oil and gas. The increase in the FGR percentage is necessary to obtain lower temperatures in the furnace (not due to emission requirements) and avoid flashing while the generator is operating at 205 psig.

Adam Morian can provide a more detailed explanation during our on-site meeting if still required.

Please not hesitate to contact me if you require any other information.

Regards,

James Molina
Project Manager
Indeck Power Equipment
Phone (847) 541-8300
jmolina@indeck-power.com

From: Laji George [mailto:LGeorge@GDSMechanical.com]
Sent: Wednesday, September 01, 2010 12:07 PM
To: James Molina
Cc: PJ Panackal; David Smith; Greg Wassilkowsky; Mark Chisom
Subject: RE: Change Order Request G-2552-001-Purchase Order

James,

Attached is the signed Purchase Order for the change order request # G2552-001. Please proceed in getting us a full submittal for the HTHW generators.

Exhibit L – page 2

Also, please provide us a letter explaining the parameters that changed from the specifications and the sole source proposal that has resulted in this change order(I have attached the Sole source proposal and the spec section for HTHW generators for your use). We need this for our records. Please provide this by end of business day 9/3/2010. Feel free to call me on 973-223-4165 or email me if you have any questions regarding this.

Thank you,

Laji George
GDS Mechanical, Inc
Ph: 973-993-9199 Fax: 973-993-8444
lgeorge@gdsmechanical.com

INDECK

From: James Molina [mailto:jmolina@indeck-power.com]
Sent: Friday, September 24, 2010 5:07 PM
To: Laji George
Cc: Mark Chisom; Adam Morian; David Smith; PJ Panackal; Chris Petcos IKE
Subject: RE: Purchase Order for COR-Required Back Up Documents
Importance: High

Laji,

As per your request and as agreed during our on-site meeting I'm attaching (2) two operating curves created by Indeck's engineering department in order to explain and substantiate the reason for the burner/fan modifications and also to provide operating guidelines for the end user.

As you can see, in Curve 1 our engineer has plotted the answers to questions 1 through 3 , as stated in your email below.

Curve 2 represents the operating guidelines when firing #2 Oil continuously. You can find the answer to question 4 in any of the curves upon determining the firing rate.

The third document attached is Indeck's recommended water quality limits for HTHW Boilers.

Please feel free to contact me should you have any questions.

Thank you,

James Molina
Project Manager
Indeck Power Equipment
Phone (847) 541-8300
jmolina@indeck-power.com

From: Laji George [mailto:LGeorge@GDSMechanical.com]

10/6/2010

Exhibit M
Page 1

Sent: Monday, September 20, 2010 12:48 PM
To: James Molina
Cc: Mark Chisom; Adam Morian; David Smith; PJ Panackal
Subject: RE: Purchase Order for COR-Required Back Up Documents

James,

My office requires the following information to back up the Change Order request to substantiate the need for the change order -

1. Curve Showing the Minimum Inlet Pressure and Outlet Temperature based on the original proposal
2. Curve showing the minimum inlet pressure and outlet temperature based on the specification
3. Curve showing the minimum inlet pressure and outlet temperature based on RFI-15 answer
4. Minimum inlet pressure with 400 deg F outlet temperature with no restrictions on fuel oil use
5. Indeck recommended water quality specification for continuous and safe HTHW Generator use

Please provide these items by end of 9-24-10. Call me on 973-223-4165 for any questions you may have.

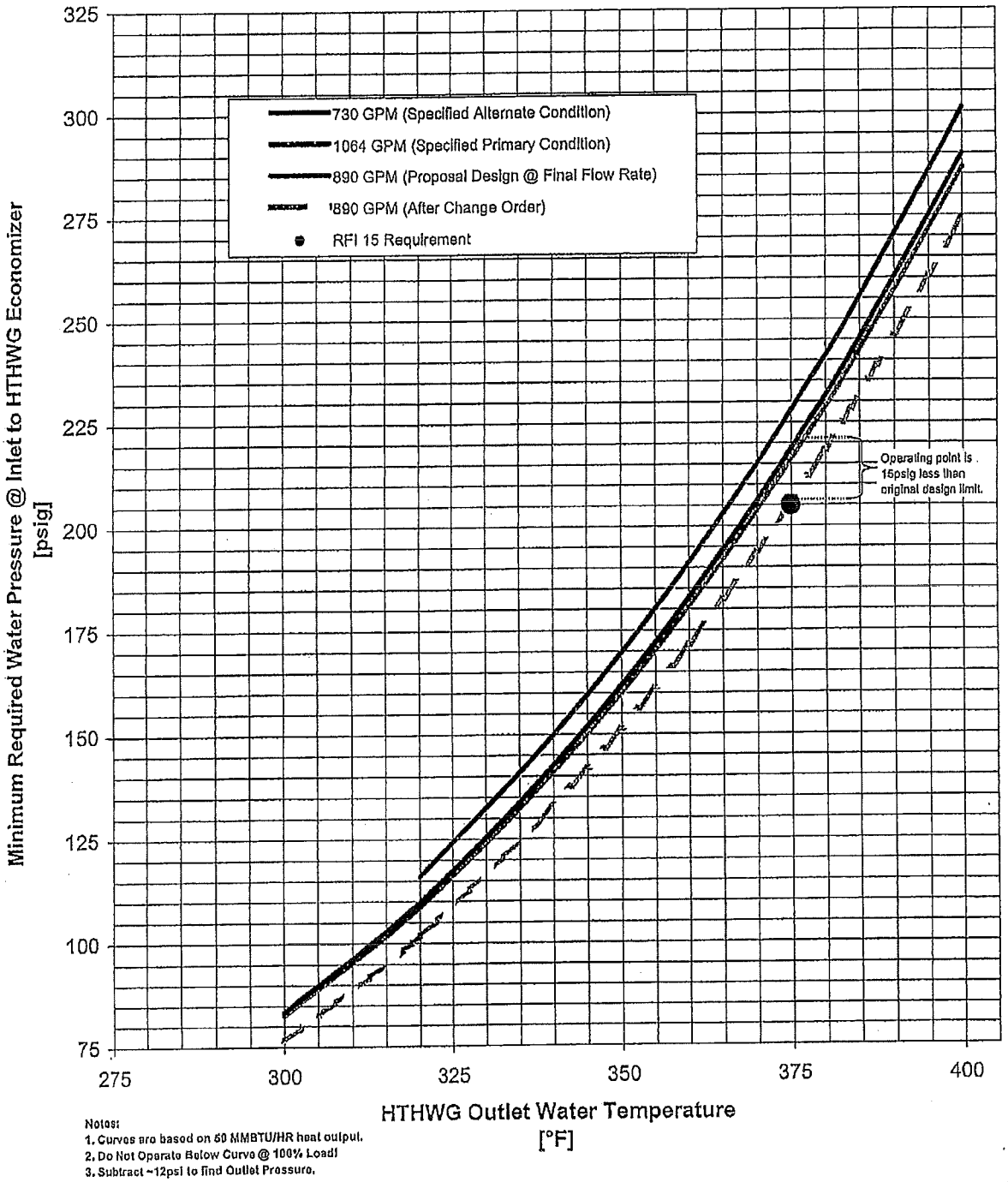
Thank you,

Laji George
GDS Mechanical, Inc
Ph: 973-993-9199 Fax: 973-993-8444
lgeorge@gdsmechanical.com

INDECK

Exhibit M - Page 2

INDECK G-2552
Operating Pressure Curve Guideline
(TJW-C-50 with Economizer)



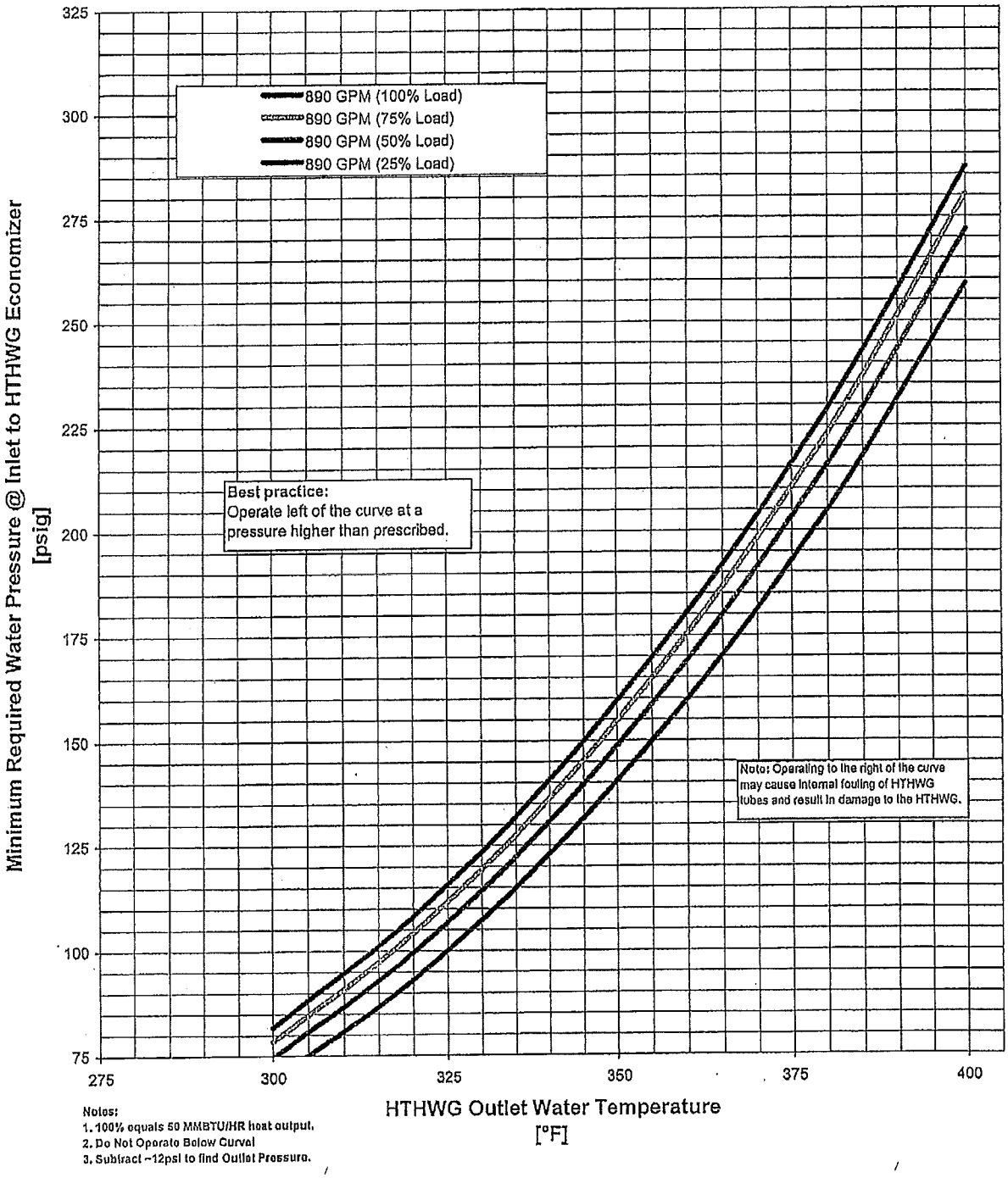
Notes:
1. Curves are based on 50 MMBTU/HR heat output.
2. Do Not Operate Below Curve @ 100% Load!
3. Subtract ~12psi to find Outlet Pressure.

Exhibit M - Page 3

INDECK G-2552

Operating Pressure Curve Guideline For Continuous #2 Oil Firing

(TJW-C-50 with Economizer)



Notes:
1. 100% equals 50 MMBTU/HR heat output.
2. Do Not Operate Below Curve!
3. Subtract ~12psi to find Outlet Pressure.

Exhibit M - Page 4

CORPORATE OFFICE 1111 Willis Avenue • Wheeling, Illinois 60090-5841
TEL 847.541.8300 FAX 847.541.9984 WEB www.indeck.com

PLANT 4300 Beaudry • St-Hyacinthe, Quebec, Canada J2S 8A5

INDECK®
POWER EQUIPMENT COMPANY

October 13, 2010

Mr. Michael C. Wallace, P.E. LEEP AP
The Port Authority of NY & NJ
Building #125, Central Terminal Area
Newark, NJ 07114
973-622-0800

Subject: Newark Liberty International Airport – Contract EWR-910.829
Central Heating and Refrigeration Plant – Replacement of High Temperature Hot Water Generators

Dear Mr. Wallace,

As requested, Indeck is providing written confirmation to the items addressed in your October 7, 2010 letter to Indeck Power Equipment Company. Responses to the items given in the letter are as follows:

1. Indeck's ability to furnish four high temperature hot water generators in accordance with the Indeck Sole Source Letter and Quotation No. QU00020463, Revision 2, dated September 8, 2009 and in conformance with the PA's Technical Specification Section 15560 and subsequent clarifying RFI's.

At the present time, Indeck certainly has the ability to provide four high temperature hot water generators in accordance with the Indeck Sole Source Letter and Quotation QU00020463 Rev 2. However, Indeck has only been given a Purchase Order for two of the boiler systems, referring to Purchase Order GDS P 801-A as Qty 1 - Unit #3 and Qty 1 - Unit #4. Contractually, Indeck cannot move forward with all four of the specified units as we have no contract to do so from GDS. Indeck is finalizing the Engineering submittals for the two contracted HTHW Generators as well as all of the sub-vendor system equipment. Engineering submittals have been provided to GDS for all of the equipment manufactured by Indeck. Indeck needed written clarification from GDS to move forward with design of the burner, burner windbox, FD Fan components, and windbox mounted fuel trains. Clarification was requested per Change Order Request (COR) G2552-001, dated July 26, 2010. All of these components are designed and manufactured by sub-vendors to Indeck.

Indeck has just recently been given notice to proceed with Change Order Request (COR) G2552-001, dated July 26, 2010, and has released the burner manufacturer to commence engineering and design of the components within their scope of supply to Indeck. Verbal approval from GDS for COR G2552-001 occurred at the September 14th meeting. Written e-mail confirmation from GDS followed on September 15th, 2010 (copy attached). Indeck is proceeding on the basis that the change order is accepted by GDS. To summarize, Indeck has been contracted to provide two HTHW Generator systems. This project has one approved change order as of the September 14, 2010 meeting.

2. The current status of the purchase order between Indeck and GDS.

Currently, Indeck has a signed agreement with GDS per Purchase Order GDS P 801-A, dated March 15, 2010. This agreement is for two, not four, HTHW Generator systems. At the present time, GDS has met their terms of this agreement. One change order, GDS P-930 was provided by GDS on 09/15/2010. This change order was per the Indeck Change Order Request (COR) G2552-001 dated 7/26/2010. To date, and as agreed to by Indeck (per Indeck Invoice IN00134330 dated 9/21/2010) and GDS, PO GDS P 930 is current.

3. The current status of the contractually required submittals for the high temperature hot water generators.

As stated during our on-site meeting, Indeck will provide the required complete package submittals 6 weeks after the burner manufacturer order is released. Release of the sub-vendor order is based on Change Order Acceptance and invoice payment according to specific terms agreed for Change Order #G2552-001. The payment for the first COR invoice arrived to Indeck on October 4, 2010. Based on this, 100 % submittals shall be ready during the week of November 15th.

4. Any additional information that may be relevant to the above.

Indeck has been very concerned about the ability of the Contractor to uphold their end of any Contract. In January 2010, when first contacted by GDS about this project, Indeck tried to ascertain all risks associated with entering a contract of this magnitude with GDS based on the D&B Report and financial information obtained by Indeck. Indeck shared these concerns with GDS and the PA during contract negotiations between Indeck and GDS. The next significant payment milestone for GDS PO 801-A, is at receipt of major pressure part materials - tubes and headers, which is planned for January, 2011. Significant delays with this receivable will cause delays in the project schedule.

Another concern is related to information exchange. It is taking an inordinate amount of time to have RFI's approved and acknowledged. The Change Order Request G2552-001 was made on July 26' 2010 and was not confirmed until September 14/15 as described above. Furthermore, on October 6, confirmation to move forward with procurement of the Engineering design needed by the Indeck sub-vendor was pulled by GDS. Indeck received a notice from GDS Instructing us to "Please do not do any procurement of Burner parts or the burner until you get a go ahead from GDS on this."(E-mail copy attached). Indeck had already commenced the procurement process with the sub-vendor based on the September 14/15 previous acknowledgements. Procurement of Burner system includes both the burner manufacturer's engineering and design as well as fabrication of the equipment. Indeck cannot hold procurement of the burner equipment and finalize Engineering Submittals. Indeck will instruct the vendor to hold with fabrication until after Engineering Submittals are approved. However, Indeck is concerned that continued further delays and vacillations to responses for RFI/Clarifications will put the schedule for manufacturing the HTHW Generator systems in jeopardy.

INDECK®

I would like to take this opportunity to thank you for your interest in Indeck Power Equipment Company and look forward to continuing to work in partnership toward a successful project. If you have any questions or need additional information, please let me know.

Sincerely,
INDECK POWER EQUIPMENT COMPANY

David E. Smith
Sales Manager

Cc: J. Molina – Indeck Project Manager
C. Petcos – Indeck Vice President

(1) CANNOT OPERATE ON #2 OIL.

Reply Reply to all Forward | Close Help

You replied on 6/4/2010 5:16 AM.

Attachments can contain viruses that may harm your computer. Attachments may not display correctly.

From: James Molina [jmolina@indeck-power.com] Sent: Wed 6/2/2010 7:32 PM

To: Laji George

Cc: Mark Chisom; PJ Panackal; rgorczynski@cgpowertech.com; David Smith

Subject: RE: Response to RFI#15 (clarified by RFI-2552-002)

Attachments: SpringFall Rev 6a Oil 50MMBTU Performance.pdf(250KB) SpringFall Rev 6a NG 50MMBTU Performance (2).pdf(248KB)

View As Web Page

Laji,

Attached are the predicted performance runs correspondent to the design parameters specified on RFI#15.

#2 Fuel Oil Note : the minimum pressure @ outlet is listed as 203 psig (~215psig @ inlet), this is our recommendation if firing #2 Oil continuously. We believe there is no risk of tube side deposit problems when firing at 205psig inlet pressure for less than 10 days/year on #2 Oil.

Please let me know if you have any questions and if GDS and/or The Port Authority have any concerns in regards to Indeck's response to RFI #15. Indeck needs confirmation in order to proceed with the design modifications. Our engineered design package is on hold until we receive your approval.

Please also keep in mind that Indeck's fabrication/design department cannot proceed until I provide them the final engineered design package and this is affecting the drawings deliverable schedule.

Regards,

(1)

James Molina

From: Laji George [mailto:LGeorge@GDSMechanical.com]
Sent: Wednesday, June 02, 2010 4:15 AM
To: James Molina
Cc: Mark Chisom; PJ Panackal; rgorczynski@cgpowertech.com; David Smith
Subject: RE: Response to RFI#15 (clarified by RFI-2552-002)

Jim,

Please provide performance data for Nat. Gas and #2 Fuel oil at the design parameters specified in RFI-15 to back up this letter.

Thank you,

Laji George
GDS Mechanical, Inc
Ph: 973-993-9199 Fax: 973-993-8444
lgeorge@gdsmechanical.com

-----Original Message-----
From: James Molina [mailto:jmolina@indeck-power.com]
Sent: Tue 6/1/2010 9:32 AM
To: Mark Chisom
Cc: Laji George; PJ Panackal; rgorczynski@cgpowertech.com; David Smith
Subject: Response to RFI#15 (clarified by RFI-2552-002)

Mark,

2

In response to RFI # 15 as further clarified by RFI-2552-002:

The performance requirements clarified in answer RFI #15 and RFI-2552-002 will supersede the range of design parameters and operating conditions of "Division 15, Section 15560, Addendum

No.1, dated C 09/08/09" HTHW Generator Specification, as well as the design proposed in Indeck quotation QU00020463.

Minor changes need to be made in order to accommodate the performance requirements of RFI # 15. Specifically, the changes will accommodate the revised flow rate of 890 GPM at the HTHW generator water inlet. Once the HTHW generator design is modified to meet the revised conditions set forth in RFI #15, the generator will no longer meet the operating requirements previously specified and proposed.

Given that the HTHW generator will operate continuously firing natural gas and intermittently (10 day/year or less) firing No. 2 Oil with a inlet water flow of 890 GPM and an outlet water temperature of 375°F, Indeck recommends a steady-state inlet water pressure of at least 206 psig. It is stated in answer RFI #15, that operation during transients may cause the water inlet pressure to drop as low as 205 psig. Although operating pressure may drop below our recommended threshold during transients, it is our understanding that current site practices (including water chemistry control, operating procedures, HTHW generator duty loading, and system operation) have lead to long term successful operation of similar equipment in regard to water side fouling. Given the end user's successful track record in regards to minimal water side fouling of like equipment, Indeck has no legitimate reason to require a higher operating pressure in order to meet the requirements as clarified by RFI #15 and RFI-2552-002.

Regards,

From: Mark Chisom [mailto:MChisom@GDSMechanical.com]
Sent: Wednesday, May 19, 2010 3:18 PM
To: James Molina
Cc: Laji George; PJ Panackal
Subject: ewr-910.829

JIM

ATTACHED IS PORT AUTHORITY RESPONSE TO GDS RFI 15 SENT TO YOU UNDER SEPARATE COVER.; PLEASE HAVE YOUR ENGINEERS REVIEW AND PROVIDE INDECK COMMENT TO RFI RESPONSE. YOUR REPLY WILL BE NEEDED RIGHT

3

AWAY.

Thank you,

Mark Chisom ? Project Coordinator

GDS Mechanical, Inc. ? HVAC + General Contractors

39 East Hanover Ave. ? Suite B1 ? Morris Plains, NJ 07950 ? p: 973.993.9199 ? f: 973.993.8444 ? c: 732.713.2169

mchisom@gdsmechanical.com

4

INDECK

5

Laji George

From: James Molina [jmolina@indeck-power.com]
Sent: Monday, July 12, 2010 6:26 PM
To: Laji George; PJ Panackal; Mark Chisom
Cc: Chris Nystrom; Adam Morian; David Smith; rgorczynski@cgpowertech.com; Greg Wassilkowsky; Gary Blazek IKE; Martin Lenick
Subject: G-2552 Newark Airport Clarifications (60% Complete GA and Design)
Importance: High
Attachments: G2552-001 Rev0 G100 60%.pdf

G2552-001 G100 60%.pdf

Laji,

I am attaching a 60% complete General Arrangement drawing for the TWJC-50 HTHW Generator to be provided by Indeck for the specific Newark Airport project. Although this drawing is not completed, it has enough information for GDS and the Port Authority to review overall dimensions and to identify Indeck's equipment, ductwork and piping arrangements, for GDS to start coordinating the design of all other systems in the plant.

In order to complete Indeck's job specific design and also finalize the GA drawing, Indeck requires GDS and the Port Authority to clarify, acknowledge or respond to the following list of questions, recommendations or discrepancies between Indeck's Proposal QU00020463 Rev.3 and the Customer's Specification Division 15 Section 15560C (09/08/09):

1) The proposal indicates that burners for two out of four HTHW Generators will be shipped loose for field installation by others; P.O. # GDS-P-801A describes the HTHW Generators as Unit #3 and Unit #4. Please advise if these units shall be shipped with the burners mounted or shipped loose for field installation.

2) Access Platforms were not specified therefore were not included in the Proposal/P.O. However, some Port Authority drawings for this project show access platforms which are specifically design for this plant and differ from our standard design. Indeck's scope does not include platforms of any type. Please confirm.

3) An air preheater is shown on Indeck's preliminary GA in the proposal. This preheater was not specified and also not included in the proposal/P.O.
The use of this auxiliary equipment is typically recommended by Indeck depending on severe low temperature air intake conditions. This option was eliminated by the Port Authority during the proposal stage of this project. Indeck's scope of work for the combustion air side ends at the Fan Silencer inlet flange and does not include any structural steel supports or duct breaching to the air intake louvers. Please confirm.

4) According to GDS' response to RFI-2552-2, No. 2 Fuel Oil will be used less than 200 hours per year. Considering limited No. 2 Oil firing, Indeck does not foresee a need for sootblowers. Please advise if the the customer still desires sootblowers even though No. 2 Fuel Oil firing is limited.

During the site specific design phase it has been determined that, due to the final design parameters clarified in RFI-2552-2 and the site height restrictions, the economizer fins must be serrated and not solid (as preliminary described in the proposal) in order to maintain the proposed economizer height.

6

Based on the limited amount of No.2 Fuel Oil firing Indeck recommends this modification and does not foresee any problems. Please acknowledge and approve this design change.

There is a discrepancy between the number of casing temperature sensors required per the specification and the number offered in the proposal. Indeck's proposal offers a total of 12 sensors per unit. If the customer requires more sensors per unit this will be treated as a design change order. Please advise.

7) The specification requires the temperature sensors to be embedded between the furnace tubes and the casing. Installation of temperature sensors on the inside of the seal casing may compromise the lifetime integrity of the gas tight seal. Indeck recommends and states in the Proposal the installation of the temperature sensors on the outside surface of the inner casing in order to avoid unnecessary casing penetrations, an unnecessary risk to the seal integrity. Please acknowledge this design and also provide recommendations or requirements for the locations of the sensors.

8) The specification requests an adequate number of observation ports. Indeck recommends and provides a maximum of three (3) ports for the visual inspection of firing conditions; one (1) at the furnace and two (2) at the burner. Indeck believes there is a higher risk of casing failure by increasing the total number of observation ports. Each observation port requires the use of refractory and cooling air in order to protect the seal casing and observation port from hot furnace gases. The casing seal could potentially burn through if there is a failure in the cooling air system or if the insulating refractory disintegrates enough to fail in protecting the metal observation port and the seal casing from the furnace heat. The refractory which lines the observation ports will need routine inspections and maintenance in order to provide long term protection to the seal casing. Each added observation port not only increases inspection and maintenance requirements, but also increases the number of potential failure points of the design. This will increase the likelihood of encountering a casing failure during the life of the HTHW-G. Indeck recommends having the minimum number of observation ports required by the burner supplier for visual inspection and burner tuning. Indeck does not see any value added by increasing the number of observation ports over our standard design.

If more than three (3) observation ports are required the customer shall provide more information in regards to the needs, locations, and purpose of the ports. This is not typical of Indeck's standard design and shall be handled as a design change order if still required. Please advise.

9) While the site specific burner and fan designs were being finalized, RFI # 15 requested new operating conditions which would have the same burner duty but would allow the customer to operate at a lower HTHW-G inlet pressure. Typically it works to the end user's advantage to operate with reduced FGR (smaller fan\ducting\power requirements), however in this instance, decreasing the FGR rates would cause concern for operation at the lower inlet pressure requested by RFI # 15. The ideal solution would be to operate the boiler at a higher inlet water pressure; however this does not appear to be a possibility at this site. The end result is that we need to have a larger fan and FGR duct in order to satisfy the end user requirements requested by RFI #15. This increase has caused the FGR Duct/Burner/FD Fan to increase in size and possibly the Motor to go from 50 to 75 HP. The price impact of these changes are being calculated and will be forwarded to GDS as a Design Change Order. Please acknowledge this change and advise if you have any concerns.

10) The HTHW-G standard trim and controls are based on fixed outlet temperature. The final operating parameters presented on RFI-2552-2 imply that the outlet temperature would be constant at 375 F. Please confirm.

The customer specification requires the HTHW-G to have approved water side man access openings no smaller than 11" x 16" for cleaning and inspection. Man access to the water side is nor necessary nor included on the Lamont design. It appears that this requirement is for other type of equipment (packaged boilers). Please advise if the customer has any concerns.

7

12) Customer's specification requires 2.5 inches of refractory between the furnace wall tubes and the casing. Indeck's standard as described in the proposal is 1" compressed ceramic wool between the tangent tube furnace wall and the inner seal casing. In addition, there is 3 inches of mineral wool between the seal casing and the corrugated aluminum outer casing in order to maintain external surface temperatures below 140°F. Please advise if the customer has any concerns.

13) Customer's specification requires the economizer to be equipped with controls appropriate for limiting condensation of flue gasses. In the case of >=260°F inlet water temperature, condensation would not occur in the economizer. Per the information provided in RFI #15 and RFI-2552-2 Indeck understands that the inlet temperature range is 270-330 F. Based on this information Indeck concludes that no controls are required to prevent flue gas condensation. Please confirm or let us know if you have any concerns.

14) Per Indeck's proposal the Z-pipe requires field fit for installation by others. Please be aware that field fit includes code welding by an approved ASME stamp holder contractor. Typically one or two flanges are field fitted.

15) Customer's specification discusses the use of electric/mechanical actuators for damper positioning. Indeck's proposed and recommended actuators are electro-pneumatic. Also, our FGR and Flue Gas dampers are of the Butterfly type. Please advise if the customer has any concerns. If electro-mechanical actuators are still required this will be subject to a design change order.

16) Appendix B (Ref #1 of Division 15 Section 15560C) lists a maximum gross heat input <= 50 MMBTU/hr (HHV), however our expectation is 60.15 MMBTU/hr heat input (HHV) for 100% load and 50 MMBTU/hr output. Does this discrepancy cause a problem?

Please provide your answers and concerns no later than Monday 07/19/10.

Note:
I will out of the office on personal time from 07/13/10 to 07/16/10 and will be back on Monday 07/19/10 to follow up on any questions or concerns.

Best Regards,

James Molina
Project Manager
Indeck Power Equipment

(8)

power.com, gblazek@indeck-keystone.com, GWassilkowsky@indeck-power.com, rgorczynski@cgpowertech.com, dsmith@indeck-power.com, amorian@indeck-keystone.com, cnystrom@crc-eng.com, MChisom@GDSMechanical.com, PJPanackal@GDSMechanical.com, LGeorge@GDSMechanical.com, and is privileged. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or any other use of this mail is strictly prohibited. If you have received this transmission by error, please notify the sender jmolina@indeck-power.com immediately by return email and destroy the original transmission immediately and all copies thereof.

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9

(2) CHANGE ORDER FROM INDECK TO MEET RFI-15 REQUIREMENT

FROM: GDS MECHANICAL
39 East Hanover Avenue, Suite B1
Morris Plains NJ 07950
Telephone: 973-993-9199
Fax: 973-993-8444
Email: mchisom@gdsmechanical.com

Contract Title: Replacement of HTHW Generators@CHRP
Contract Number: EWR-910.829
Transmittal No.: 00084

DATE: 8/12/2010

TO: Name MICHAEL WALLACE
Address PORT AUTHORITY BLDG 125 NEWARK AIRPORT
City NEWARK NJ State NJ Zip 07004
Phone Floor:
Fax Email:

Attn:	Spec No.:	Submittal No.:	Rev.:	Submittal Description:	Status:
				PCO # 2 (Indeck COR)	NEW

REVIEW DIVISION:			Action:	
Architectural	o	Ilyaslav Piaskovsky	o	Shop Drawings for Approval
Civil	o		X	Calculations for Approval
Electrical	o	Nellia Walters	o	Catalog Cuts for Approval
Electronical	o		X	For Your Information (FYI)
Environmental	o	Gerald Jean Pierre		AS NOTED ON SUBMITTALS
Geotechnical	o			RESUBMIT
Materials	o	Carlos Perez		
Mechanical	o	Dennis Pietrocola		
Structural	o	Paul Wong		
Traffic	o	Jay Glass		
Consultants				

Comments:

Contractor's Project Manager: Mark Chisom Date: 8/12/10

(10)

FROM: GDS MECHANICAL

39 East Hanover Avenue, Suite B1
Morris Plains NJ 07950
Telephone: 973-993-9199
Fax: 973-993-8444
Email: mchisom@gdsmechanical.com

Contract Title: Replacement of HTHW Generators@CHRP
Contract Number: EWR-910.829
Transmittal No.: 00064

DATE: 8/12/2010

TO: Name MICHAEL WALLACE
Address PORT AUTHORITY BLDG 125 NEWARK AIRPORT
City NEWARK NJ State NJ Zip 07004
Phone Floor:
Fax Email:

Item	Spec No.	Submittal No.	Rev#	Submittal Description	Status
1				PCO # 2 (Indeck COR)	NEW

REVIEW DIVISION			Action
Architectural	o	Izyaslav Plaskovsky	o Shop Drawings for Approval
Civil	o		X Calculations for Approval
Electrical	o	Nellia Walters-	o Catalog Cuts for Approval
Electronical	o		X For Your Information (FYI)
Environmental	o	Gerald Jean Pierre	AS NOTED ON SUBMITTALS
Geotechnical	o		RESUBMIT
Materials	o	Carlos Perez	
Mechanical	o	Dennis Piatrocola	
Structural	o	Paul Wong	
Traffic	o	Jay Glass	
Consultants			

Comments:

Contractor's Project Manager: Mark Chisom

Date: 8/12/10

(1)

GDS MECHANICAL, INC.
39 E. HANOVER AVE.
MORRIS PLAINS, NJ 07950
PHONE: (973) 993-9199 FAX (973) 993-8444

8/12/2010

PORT AUTHORITY OF NY&NJ
NEWARK LIBERTY INTERNATIONAL AIRPORT
REPLACEMENT OF HTHW GENERATORS IN CHRP
EWR-910.829

WE RESPECTFULLY SUBMIT OUR PCO#2 REQUEST ON THE ABOVE REFERENCED PROJECT FOR THE FOLLOWING ITEMS OF WORK:

Increase the size of the FD Fan system elements for Indeck HTHW Generators # 3 and # 4 to meet required performances with the reduced inlet pressures available at the CHRP.

Attached is COR No. G2552-001 AND RFI # 9 FROM INDECK

SUMMARY OF PCO#1

Description	Amount($)
Subcontractor Price (see attached breakdown) 2 Generators	$25,320.00
Sub Total from Sub Contractor	$25,320.00
GC Overhead & Profit .7%	$1,772.40
Sub Total	$27,092.40
Bond 1%	$270.92
Total of PCO # 2	$27,363.32

Mark Chisom
PROJECT COORDINATOR

12

CORPORATE OFFICE 1111 Willis Avenue · Wheeling, Illinois 60090-5841
TEL 847.541.8300 FAX 847.541.9804 WEB www.indeck.com
PLANT 4300 Beaudry · St-Hyacinthe, Quebec, Canada J2S 8A5

INDECK
POWER EQUIPMENT COMPANY

Mr. Laji George
Project Manager
GDS Mechanical, Inc
39 E. Hanover Ave.
Morris Plains, NJ 07950

Date: July 26, 2010

Re: GDS Mechanical P.O. No. GDS P 801A; Indeck Project No. G-2552
Change Order Request G2552-001
Increased size of FD Fan Systems for the HTHW Generators Unit #3 and Unit #4

Dear Mr. George,

Indeck Power Equipment Company, ("Indeck") is submitting this change order to GDS Mechanical, Inc, ("GDS") in the amount of Twenty Five Thousand Three Hundred Twenty Dollars ($25,320.00), to increase the size of the following FD Fan System elements for Units # 3 and #4:

a. Burner Register
b. FD Fan
c. FD Fan Motor
d. FD Fan Silencer
e. Air/FGR Mix Box
f. FGR Duct and Damper

Indeck's engineering department and the Burner manufacturer have determined that the increase in size of the above elements is necessary in order to ensure that the HTHW Generators will meet the operating requirements set forth in RFI #15 and RFI# 2552-002.

This proposal does not include Taxes. Payment terms are upon receipt with copy of change order. All invoice payments are net 30 days at receipt of invoice.

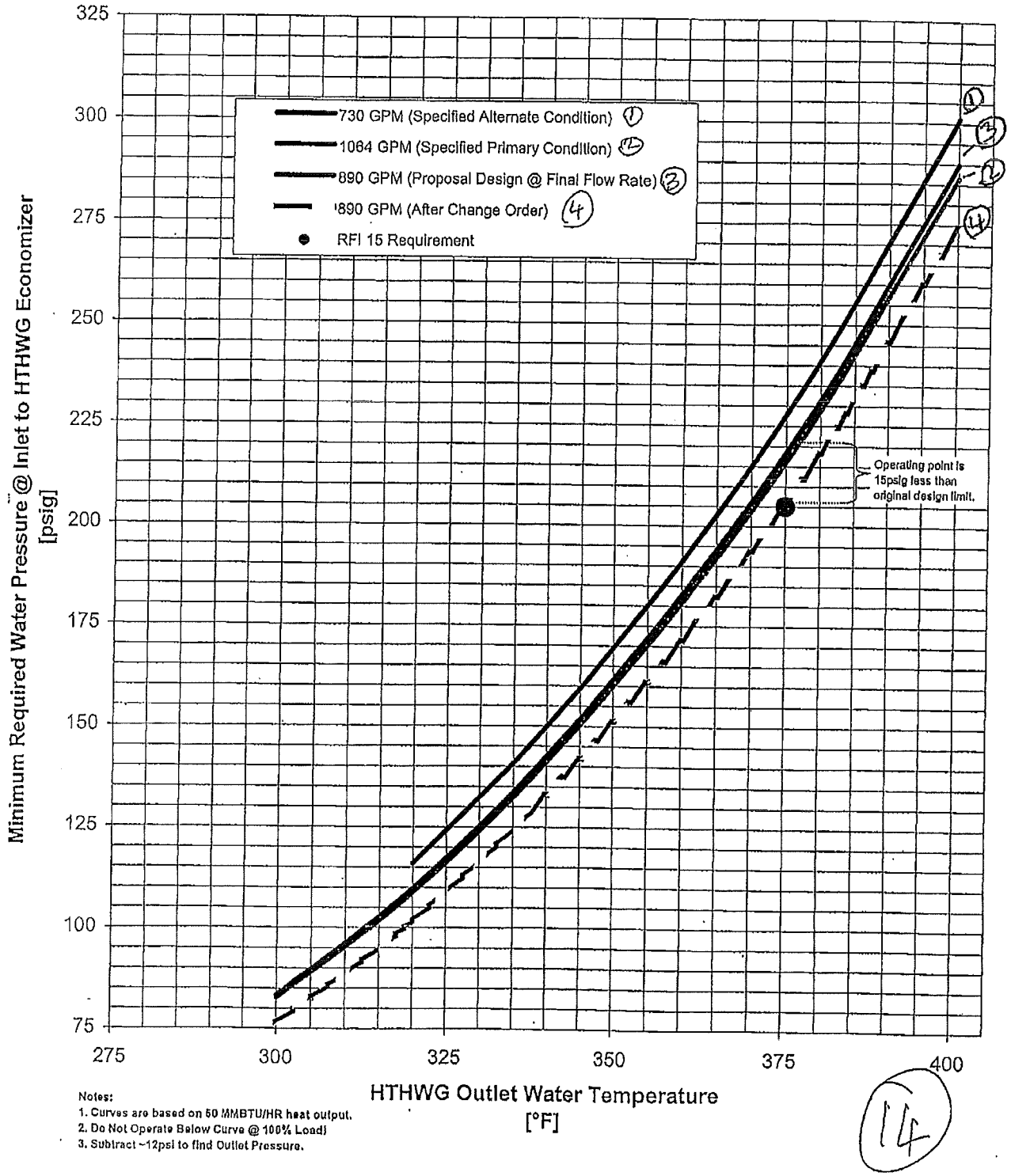
Should GDS elect to have Indeck proceed with this proposal, please forward a change order in the amount of $ 25,320.00 referencing Indeck change order No.G2552-001.

Regards,

James Molina
Project Manger
Indeck Power Equipment Company .

12

INDECK G-2552
Operating Pressure Curve Guideline
(TJW-C-50 with Economizer)



Notes:
1. Curves are based on 50 MMBTU/HR heat output.
2. Do Not Operate Below Curve @ 100% Load
3. Subtract ~12psi to find Outlet Pressure.

14

UNAVAILABILITY OF TEMP. GENERATOR BASED ON RFI - 15

CELEBRATING OVER 20 YEARS OF SERVICE

www.cgpowertech.com

From: Brian Richter [mailto:BRichter@indeck-power.com]
Sent: Thursday, June 03, 2010 5:05 PM
To: Richard Gorczynski
Subject: FW: Requested Revised data for boiler rental proposal-Newark Airport Project

Looks like 265 psi minimum pressure based on the those conditions. could temps change??

From: Adam Morian
Sent: Thursday, June 03, 2010 3:49 PM
To: Brian Richter
Cc: Terry Pawlowski IKE; Neil Bradwell IKE
Subject: RE: Requested Revised data for boiler rental proposal-Newark Airport Project

Brian,

This type of HTHW generator is more pressure sensitive than our Lamont line of HTHW generators. Given the construction of this HTHW generator and the operating conditions described, I do not recommend operating at 375°F outlet water temperature when provided with 205 psig inlet water pressure and 50 MMBTU/hr heating duty. Given a water flow rate of ~814GPM, a heating duty of 50MMBTU/hr, and an outlet temperature of 375°F, I recommend using a minimum inlet pressure of at least 265 psig for protection of the boiler. There is a significant risk of steaming internally and fouling tubes, which could cause tubes to overheat if this particular HTHW-G is only provided 205 psig in order to generate 375°F hot water.

In order to avoid the potential risk of fouling up tubes, we may want to ask the prospective end user if it is p possible to operate at a higher pressure, lower outlet temperature, and higher water flow rate.

Regards,

Adam Morian
Thermal Process Engineer

Indeck Keystone Energy, LLC

15

Reply | Reply to all | Forward | | Close | Help

From: Richard Gorczynski [rgorczynski@cgpowertech.com] Sent: Thu 6/3/2010 11:51 PM

To: Laji George

Cc: PJ Panackal

Subject: FW: Requested Revised data for boiler rental proposal-Newark Airport Project

Attachments:

View As Web Page

George,

See below the comments regarding this question with the pressure. Please let me know if I can help in any other way.

PS

If this was my project, I would was one of the new HTHW boilers as a temporary boiler and then put this into place once I needed it after the other 3 boilers were installed. Please let me know if we can discuss this option?

Thank you

Richard Gorczynski

C.G. PowerTech Inc.

216 Newark-Pompton Turnpike

Pequannock, NJ 07440

office: 973-628-0777

cell: 973-296-2402

fax: 973-628-0990

Email: rgorczynski@cgpowertech.com

CG POWERTECH

16

GDS MECHANICAL, INC.

October 11th, 2010

Michael C. Wallace, P.E.
Senior Resident Engineer
Building #125, Central Terminal Area
Newark, NJ 07114

RE: Supplement Letter to GDS Mechanical, Inc Letter dated 10/10/10
Notification of Material Changes to the Specification for the Contract EWR-910.829

Dear Mr. Wallace,

GDS Mechanical, Inc would like to point out that the guidance received through RFI-12 and RFI-15 has made material changes to the specification section 15560 for the HTHW Generators, specifically to paragraph 2.03H on page 465. We have sent you written notification on the changes previously on two occasions – 1. Letter dated June 7th 2010 *(Attachment-8)* and 2. Letter from my Engineer dated August 17th 2010 ***(Attachment-9)*** with no response from the Port Authority. At this time we would like to state these changes again for your perusal.

Factual Background

a). Specification section 15560 for High Temperature Hot Water Generators *(Attachment-1&2)*:

1). Page 460 states: Operating Pressure 400psig, maximum
2). Page 465 states: Operating Pressure 300psig@400°F

b). Indeck Sole source Proposal provided as a Notice to Bidders on September 17th 2009 *(Attachment-3)*:

1).Page 7 on Indeck Quotation QU00020463 states:
Minimum Inlet Pressure 353psig
Outlet Water Temperature 400°F
Flow Rate 759.6 USgpm

Major Concern: Please note that once the Generator is modified to operate under RFI-12 & RFI-15 conditions it **WILL NOT** be able to operate under the specification condition of 300psig@400°F and if we proceed as per the conditions stated in the specification the Generator will not be able to operate under operating conditions given as per RFI-12 and RFI-15 and email dated 8/31/10. **Letter from Indeck stating this fact is attached.** *-(Attachement-7)*

39 E. Hanover Ave, Suite B1, Morris Plains, NJ 07950
Ph: 973-993-9199 Fax: 972-993-8444

c). RFI-12 (dated 3/26/10) ***(Attachment-4)***:

The schematic attached with RFI-12 answer clearly states

1). System Pressure 235psig@400°F (Mid Winter Condition) and
2). Operating Pressure 273psig@400°F (Mid Winter Condition)

These conditions are a direct conflict with the conditions as per the specification and Indeck sole source proposal.

**Also note that there is a +40psig shown on the schematic for Gen Circ Pump which will be corrected by Port Authority (CRC) via email dated 8/31/10. **

d). RFI-15(dated 5/19/10) states ***(Attachment-5)***:

Gen Inlet Pressure (Available)	205psig
Gen Discharge Temp	375°F
GPM	890GPM

This is a modified version of RFI-12 based on Outlet Temperature of 375°F.

e). Email from CRC Engineering (dated 8/31/10) stating that the Pump Curve provided with RFI-12 has only 29 psig opposed to 40 psig mentioned in the schematic provided with RFI-12. This email further modified RFI-12. ***(Attachment-6)***

GDS Mechanical, Inc strongly suggest that the Port Authority further investigate these changes and provide us with a fully executed contract modification incorporating these material changes, if the Port Authority deem necessary to proceed the contract with the modified operating conditions as per RFI-12 and RFI-15. We would also like to point out that these constantly changing operating conditions provided to us through notes on submittals and through the above mentioned documents is the primary reason for the delays that this project has incurred.

Respectfully,

Pramod J Panackal
Officer
GDS Mechanical, Inc.

39 E. Hanover Ave, Suite B1, Morris Plains, NJ 07950
Ph: 973-993-9199 Fax: 972-993-8444

Attachments:

1. Page 460 from Specification Section 15560
2. Page 465 from Specification Section 15560
3. Page 7 from Indeck Quotation QU00020463
4. RFI-12
5. RFI-15
6. Email from CRC changing the pump head information on RFI-12
7. Letter from Indeck stating that Modified Generator will not work for original specification condition
8. Letter from GDS to Mike Wallace dated 6/7/10 notifying him on the changes
9. Letter from GDS Engineering Firm-Colvin Engineering to Mike Wallace dated 8/17/10 notifying him on the changes

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Attachment 1

1.03 DESIGN AND PERFORMANCE REQUIREMENTS

A. Design and performance of components and methods specified herein shall comply with all Federal, State and Local laws, ordinances, regulations and codes that would apply if the Authority were a private corporation and with the latest industry standards, including, but not limited to those of the entities listed below.

American Gas Association (AGA)

American National Standards Institute (ANSI)

American Society of Mechanical Engineers (ASME): Boiler and Pressure Vessel Code

American Society of Mechanical Engineers (ASME): Code for Pressure Piping

American Society for Testing and Materials (ASTM)

Factory Mutual Engineering and Research (FM)

Industrial Risk Insurers (IRI)

National Board of Boiler and Pressure Vessel Inspectors

National Fire Prevention Association (NFPA)

Nationsl Electrical Manufacturers Association (NEMA)

New Jersey Administrative Code - Title 7 (7:27-19.7)

New Jersey Department of Environmental Protectsion (NJDEP)

New Jersey Uniform Construction Code

Occupational Safety and Health Administration (OSHA)

Underwriters Laboratories Inc. (UL)

United States Environmental Protection Agency (USEPA)

Design and performance requirements of the high temperature hot water generator system shall be as specified herein.

B. HTHW system operating conditions are as follows:

Operating Pressure	400 psig maximum
Normal Supply Temperature Range	325-400°f
Normal Return Temperature Range	250-300 °f
Hydrostatic Test Pressure	600 psi
Design Code	ASME NFPA 31, 54 & 85
HTHW Piping Design Code	ANSI B31.1

1.04 QUALITY ASSURANCE

A. Verify that the Contractor or Subcontractor performing the HTHW generator installation has within the last five (5) years successfully completed the installation of a minimum of

Attachment 2

2. Submit a letter from instrumentation supplier that combustion controls are compatible and matched with burner and generator for proper operation.

3. Submit a letter from the burner manufacturer stating that the burners are able to burn natural gas and #2 oil at emissions rates that are lower than the regulated emissions limits.

2.03 HIGH TEMPERATURE HOT WATER GENERATORS

A. The HTHW generator shall be designed in accordance with applicable sections of the ASME Boiler and Pressure Vessel Code and any additional requirements specified herein.

B. Arrange for HTHW generators to receive authorized ASME Code inspection prior to shipment from factory. The Authority reserves the right to have an independent National Board of Boiler and Pressure Vessel or ASME Pressure Vessel Inspector witness generator fabrication and testing at the cost of the Authority.

C. Submit to the Engineer copies of all permits, protocols and inspection reports.

D. Submit documents verifying that HTHW generator emissions are certified to meet the latest testing and operating requirements of the New Jersey Department of Environmental Protection (NJDEP) and U.S. Environmental Protection Agency (US EPA).

E. HTHW generators shall be capable of firing with smoke level not to exceed 5% opacity as indicated by the calibrated opacity monitor, over a 6 minute rolling average when firing on natural gas. 5% or less opacity is defined as no visible smoke by the naked eye.

F. Transmit from the HTHW generator manufacturer to the Engineer combustion data for all fuels at 100%, 75%, 50%, 25% and 10% loads.

G. All furnace walls other than front wall shall be 100% water-cooled.

H. HTHW Generator Design Parameters:

Output	50,000,000 btu/hr
Design Pressure	500 psig @ 470° F
Operating Pressure	300 psig @ 400 ° F
Primary Condition:	
Inlet Water Temperature	300 ° F
Outlet Water Temperature	400 ° F
Flow Rate	1,064 GPM
Alternate Condition:	
Inlet Water Temperature	254 ° F
Outlet Water Temperature	400 ° F
Flow Rate	730 GPM
Maximum Water Pressure Drop -	
Generator	26 ft. of H_2O
Economizer	7 ft. of H_2O

Attachment - 3

INDECK

Technical Data:

Boiler type:	Indeck IBW International Lamont®
Model No.:	TJW-C-50
Burner Model:	Indeck/Todd Variflame
Heat medium:	High temperature hot water
Maximum Output:	50 MMBTUh
Design pressure:	500 psig
Minimum inlet pressure:	353 psig
Inlet Water Temperature:	260°F
Outlet Water Temperature:	400°F
Flow rate:	759.6 USgpm
Main fuel:	Natural gas
Secondary fuel:	# 2 fuel oil
Location:	Indoor

Heating surfaces:	50
Furnace (flat proj.): (ft^2)	698
EPRS: (ft^2)	624
Convection: (ft^2)	3,786
TOTAL: (ft^2)	4,484
Furnace Volume: (ft^3)	1,058

Furnace dimensions:	50
Length to bridgewall (in):	141
Total length (in):	181
Width (in):	96
Height (In):	98

Overall dimensions:	50
Length casing to casing:	22'0"
Width casing to casing:	9'1"
Height base to water outlet:	11'3"

Approx. weight (w/burner):	50
Shipping (lbs):	60,500
Operating (lbs):	68,308
Fluid content (lbs):	7,808

Pressure Parts :	Dia.	MWT	Material
Header:			
inlet:	: 10" NPS	SCH120	SA-106B
outlet:	: 10" NPS	SCH120	SA-106B
Tubes	: 1¼ OD	0.095"	SA-178-A

Attachment 4
5 pgs

THE PORT AUTHORITY OF NY & NJ

Request For Information

Contractor's FORM

PROJECT TITLE:	Replacement of HTHW Generators			
CONTRACT NUMBER:	EWR-910.829		RFI NUMBER:	12
TO COMPANY:	NAME / RE:	PHONE:	FAX:	EMAIL:
Port Authority of NY/NJ	Kevin Hogan	973-622-0800-x263	973-662-0172	
	M. Wallace	973-622-0800-x251	973-662-0172	mcwallac@panynj.gov
FROM COMPANY:	NAME / PM:	PHONE:	FAX:	EMAIL:
GDS MECHANICAL	Mark Chisom	973-993-9199	973-993-8444	mchisom@gdsmechanical.com

RE / TITLE:	HTHW GENERATORS	
PRIORITY:	HIGHEST	
WORK IMPACT:	DESIGN, INSTALLATION	
REFERENCE DRAWING:	N/A	*(You may attach any additional information)*
ATTACHMENTS:	☑ YES ☐ NO	

THERE ARE 2 ATTACHMENTS

QUESTION:

CONTRACT SEPECIFICATION SECTION, 15560.2.03.H,,*HTHW GENERATOR DESIGN PARAMETERS* ,LISTS THE OPERATING PRESSURE AT 300psig. .THE INDECK PROPOSAL, PAGE 7, DATED SEPTEMBER 9, 2009, WHICH WAS A PART OF THE BID DOCUMENTS STATES THAT THE MINIMUM INLET PRESSURE IS 353psig. PLEASE CLAIRIFY THE FOLLOWING: 1) MINIMUM OPERATING PRESSURE. 2) NORMAL OPERATING PRESSURE. 3) MAXIUM OPERATING PRESSURE.

QUESTION SIGNED BY:	MARK CHISOM
QUESTION DATE:	3/25/2010
REQUIRED DATE:	3/26/2010

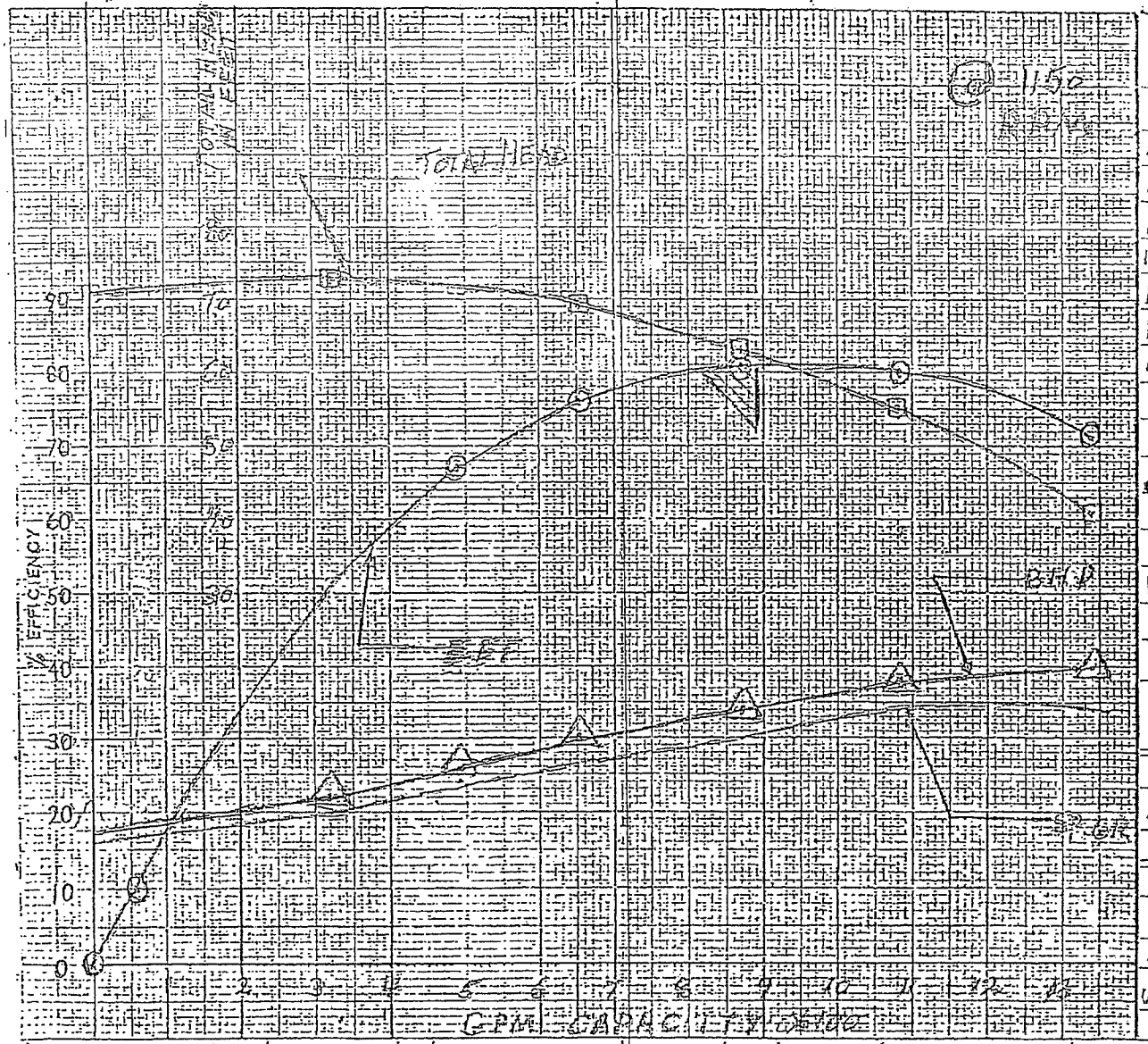
ANSWER:

The temporary HTHW generator must fully integrate with the existing HTHW heating system at EWR without modifying current operating conditions. Please see the attached HTHW generator circ.pump curve and HTHW Mid Winter & Spring/Fall flow diagrams. The HTHW diagrams provide operating conditions for the existing system at fmax and min load. Based on the diagrams, pump curve and the burner/generator design model, the temporary HTHW generator manufacturer should have sufficient information to design the flow characteristics of the unit to prevent local vaporization of the HTHW as it absorbs heat while passing through the generator. The flow diagrams represent operating conditions at specific temperatures, pressures, and flow relationships. The attached pump curve and saturated steam tables can be used to interpret other flow, pressure and delta temperature conditions. The generator must be designed to handle the flow, pressure and delta temperature conditions throughout the operating range from return temperatures of 260 to 300 and supply temperatures of 300 to 400.

ANSWER SIGNED BY:	Chris Nystrom
ANSWER DATE:	3/26/2010
DEPARTMENT & DIVISION	
CM SPECIALIST:	
PHONE	

HTHW GENERATOR
CIRC. PUMPS

20 HP MOTOR.



WORTHINGTON CORPORATION
PUMP TEST DATA

RPM	GPM	HD.	BHP	EFF.	NPSH
1181.1	895.0	66.7	15.[illegible]	80.8	10[illegible]
1183.3	1112.0	58.1	20.3	86.3	9[illegible]
1180.4	1370.0	43.2	21.1	70.9	8[illegible]
1185.5	675.0	73.4	16.4	76.2	9[illegible]
1187.2	502.0	76.8	14.6	66.8	10[illegible]
1188.9	328.0	77.9	12.[illegible]	51.1	[illegible]
1200.0	0	77.8	10.2	0	13[illegible]

REVISION	APP'D.
APPROVED	
THE PORT OF NEW YORK AUTHORITY	
DATE 10-27-67	

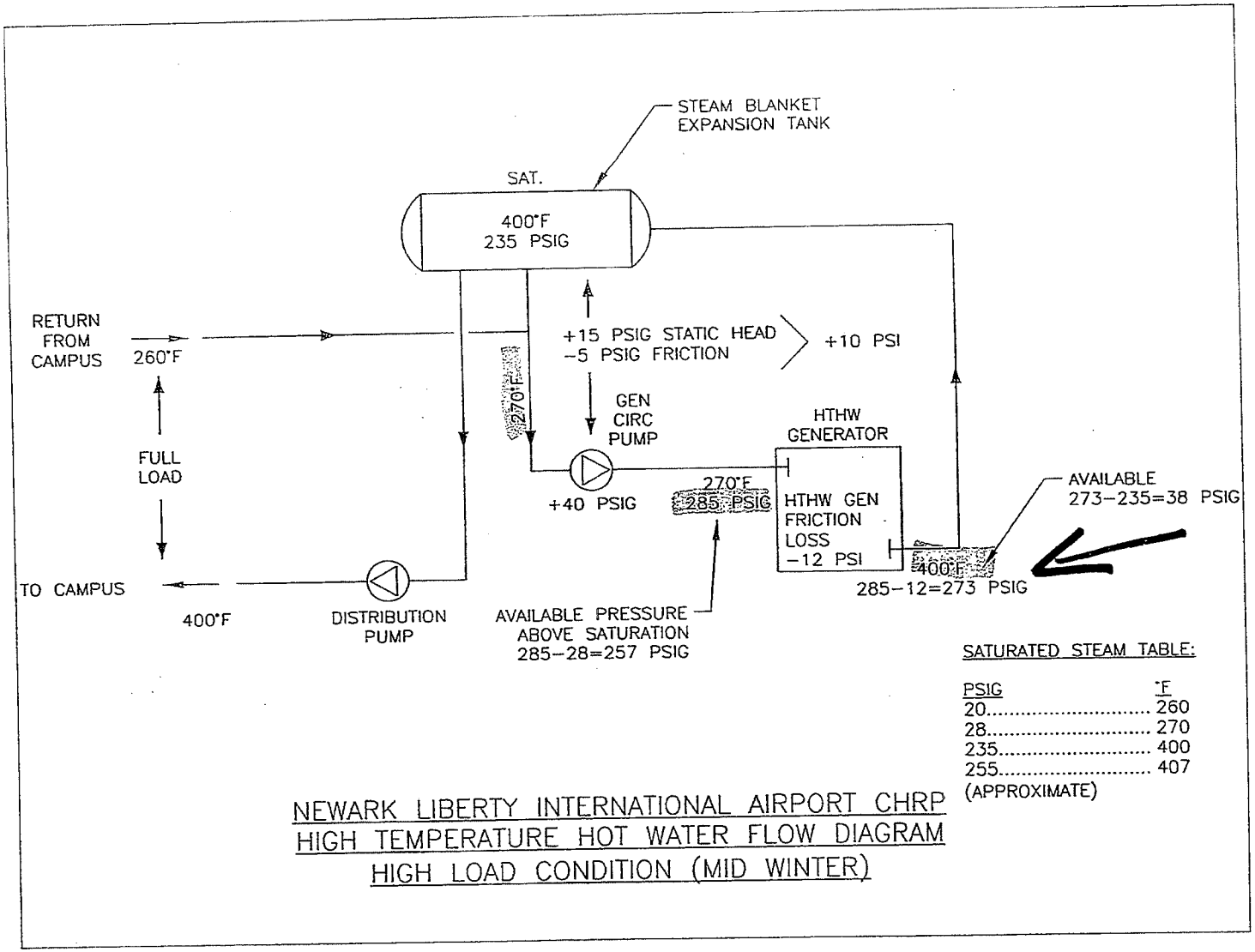
CASING DATA

MATERIAL	FINISH	TONGUE
4-6% Chr		

IMPELLER DATA

MATERIAL	FINISH	DISC. TIPS
13% Chr	2	
UB-4587A	A 10	12 5/8"
PATT. NO.	COMB. NO.	DIA.

PUMP	STAGES	ORDER NO.	SERIAL NO.	DATE TESTED	TEST	APPROVED	TEST DRIVER	VENTURI	PLOTTED RPM	CURVE NO.
6HN-1143		P45 3771	1621685	10/16/67	W	WB	25 HP T/M	0	1150	E-196367

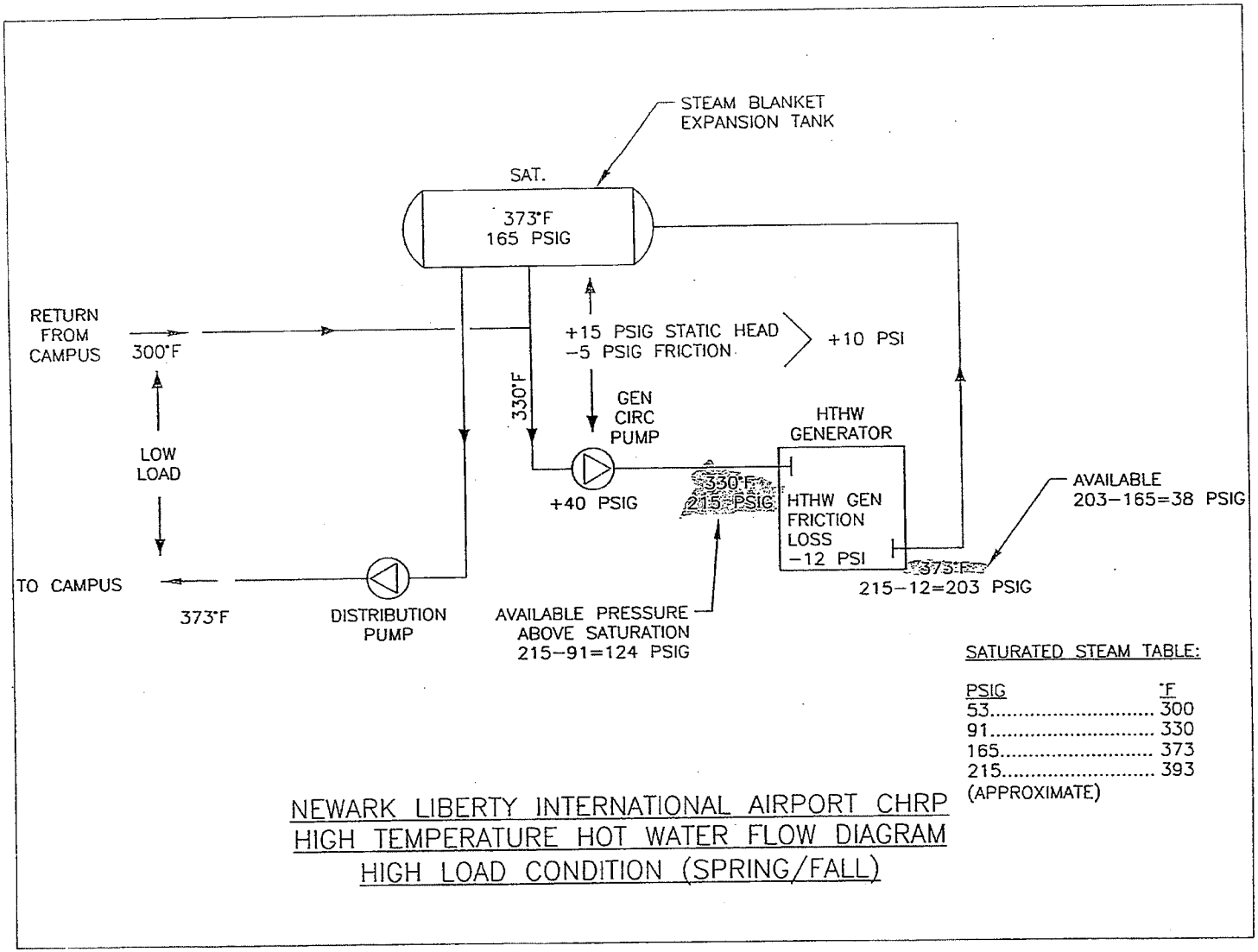


SATURATED STEAM TABLE:

PSIG	°F
20	260
28	270
235	400
255	407

(APPROXIMATE)

NEWARK LIBERTY INTERNATIONAL AIRPORT CHRP
HIGH TEMPERATURE HOT WATER FLOW DIAGRAM
HIGH LOAD CONDITION (MID WINTER)

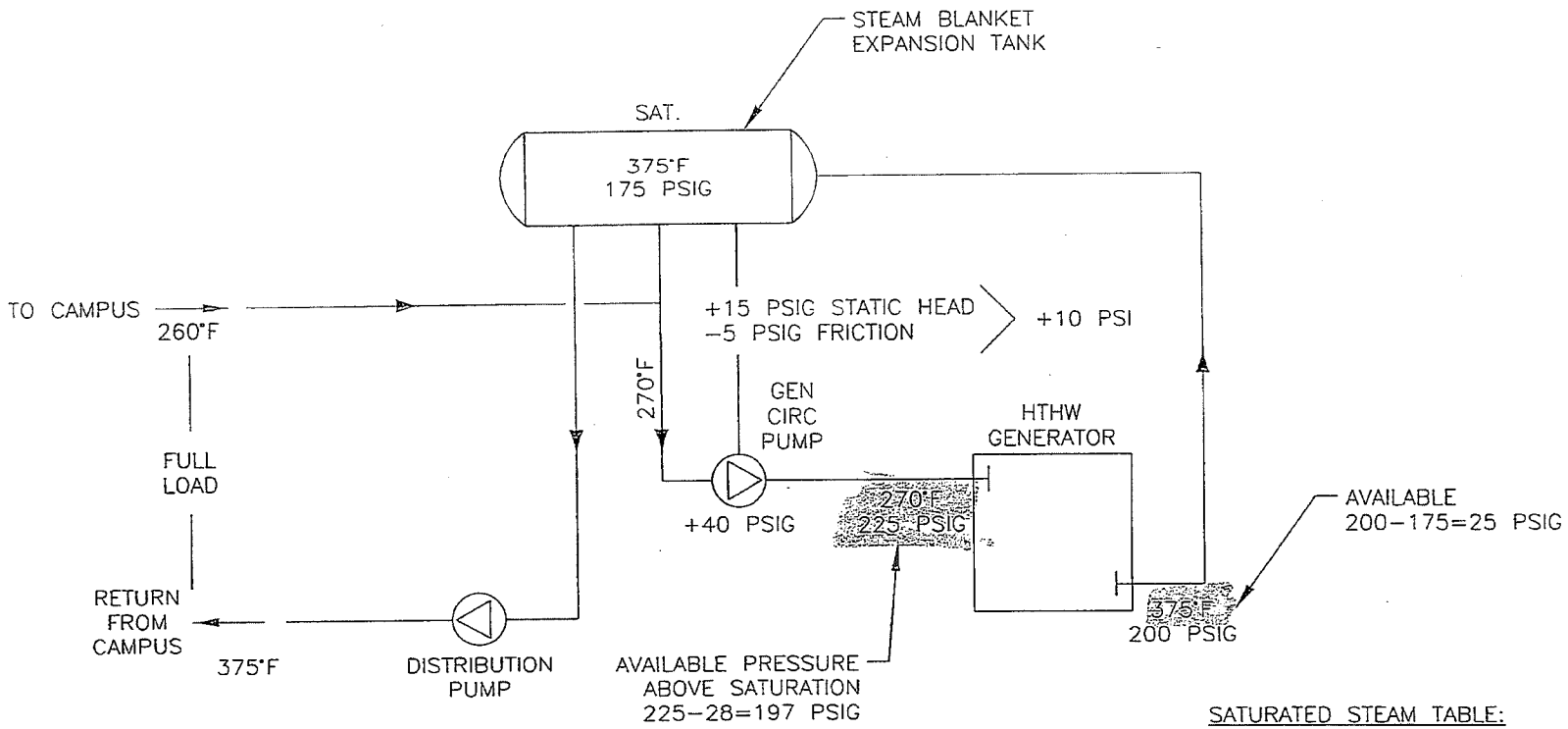


SATURATED STEAM TABLE:

PSIG	°F
53	300
91	330
165	373
215	393

(APPROXIMATE)

NEWARK LIBERTY INTERNATIONAL AIRPORT CHRP
HIGH TEMPERATURE HOT WATER FLOW DIAGRAM
HIGH LOAD CONDITION (SPRING/FALL)



SATURATED STEAM TABLE:

PSIG	°F
20	260
28	270
175	375

(APPROXIMATE)

NEWARK LIBERTY INTERNATIONAL AIRPORT CHRP
HIGH TEMPERATURE HOT WATER FLOW DIAGRAM

Attachment 5

THE PORT AUTHORITY OF NY & NJ

Request For Information

Contractor's FORM

PROJECT TITLE:	Replacement of HTHW Generators			
CONTRACT NUMBER:	EWR-910.829		RFI NUMBER:	15
TO COMPANY:	NAME / RE	PHONE	FAX	EMAIL
Port Authority of NY/NJ	Kevin Hogan	973-622-0800-x263	973-662-0172	
	M. Wallace	973-622-0800-x251	973-662-0172	mcwallac@panyni.gov
FROM COMPANY:	NAME / PM	PHONE	FAX	EMAIL
GDS MECHANICAL	Mark Chisom	973-993-9199	973-993-8444	mchlsom@gdsmechanical.com

RFI TITLE:	HTHW GENERATORS		
PRIORITY:	HIGHEST		
WORK IMPACT:	DESIGN, INSTALLATION		
REFERENCE DRAWING:	N/A		*(You may attach any additional information)*
ATTACHMENTS:	☐ YES	☑ NO	

QUESTION:

THE RESPONSE,RFI 12 REV 1, RECEIVED 4/8/10, FROM GDS RFI NO 12, DATED 3/25/10, STATES THAT THE INLET PRESSURE REQUIRED FOR THE HTHW GENERATORS AND HTHW TEMPORARY GENERATOR WAS 285psi AT 270F UNDER WINTER CONDITIONS (FULLOR NEAR FULL LOADS).. DURING REVIEW OF RESUBMISSION OF TEMPORARY HTHW GENERATOR SUBMITTED 4/1/10 AN EMAIL WAS RECEIVED FROM THE DESIGN ENGINEER PROPOSING A NEW SCENARIO OF 225psi INLET PRESSURE AT APPROX 270F. DURING A SUBSEQUENT MEETING I ATTENDED WITH MS. SMOLAR, MR. MR. KOSAKOWSKI AND MR. McGAUHRAN IT WAS STATED THAT THE INLET OPERATING PRESSURE IS 215psi.. PLEASE CONFIRM THE EXISTING WINTER CONDITIONS THAT THE CHRP CAN OPERATE THE TEMPORARY HTHW GENERATOR AND PROPOSED INDECK HTHW GENRATORS AT.

QUESTION SIGNED BY:	MARK CHISOM
QUESTION DATE:	5/13/2010
REQUIRED DATE:	5/17/2010

ANSWER:

For clarification, the response to RFI#12 included two conditions; Mid Winter & Spring/Fall. Both conditions and any operating point inbetween are valid. Please note the lowest pressure condition occurs during the Spring/Fall condition, available HTHW generator inlet pressure is 215 PSI. Including a safety factor of 5% (for fluctuation in operating conditions during return temperature transitions) the operating pressure available at the boiler inlet is 205 PSIG at the following operating conditions:

GPM	890 GPM (Based on pump curve at desired head with multiple HTHW generators in parallel operation.)
Gen Inlet Pressure (Available)	205 PSIG
Gen Inlet Temperature Range	270 to 330 Deg. F.
Gen Discharge Temp	375 Deg. F.
Approximate Output Capacity	50 MMBTU

Please note that the temp generator will always be operating in parallel with one of the existing facility generators. When the system is in parallel operations, the HTHW flow rate is fixed at 890 GPM per unit.

ANSWER SIGNED BY:	Chris Nystrom
ANSWER DATE:	5/19/2010
DEPARTMENT & DIVISION	
PM SPECIALIST:	
PHONE	

Attachment 6

Laji George

From: Chris Nystrom [cnystrom@crc-eng.com]
Sent: Tuesday, August 31, 2010 9:04 AM
To: 'Fred Broberg'
Cc: PJ Panackal; Laji George; Mark Chisom; 'Cheol Kim'; 'Smolar, Kelly'; ayork@panynj.gov; Wallace, Michael; Hogan, Kevin
Subject: RE: Liberty Airport
Attachments: PA Newark Airport - HTHW Generator Circ Pump Curves.pdf

Frederick,
Please direct all correspondence in the future to the Port.

We verified the pump curve with operations after the meeting on Wednesday and this information must not have found its way to you yet. To expedite the process for this particular issue, I have attached the curve we received from the CHRP operations team which does indicate a total differential head of approximately 66 feet at design flow rate at 1180 RPM (64' at 1150 RPM). The 40 PSI indicated on the high and low diagrams was based on the original pump curve found in the facility records. That curve turned out to be for the secondary loop pumps, which are the same make and model with a slight change in impeller and horsepower. Both curves are very difficult to read and had to be traced for legibility. The manufacturer had been contact at the onset of the project, but they could not provide any curves or data on the existing pumps. Please use the attached curve for your calculations.
Chris

No More 40 PSI only 29 PSI

Chris Nystrom
Director of Field Services

CRC Engineering, P.C.
1261 Broadway Voice (212) 889-1233
Suite 608 Fax (212) 889-1211
New York, New York 10001 Cell (631) 767-7606
cnystrom@crc-eng.com www.crc-eng.com

From: Fred Broberg [mailto:fbroberg@cea-ut.com]
Sent: Tuesday, August 31, 2010 7:47 AM
To: cnystrom@crc-eng.com
Cc: PJ Panackal; Laji George; Mark Chisom; Cheol Kim
Subject: Liberty Airport

Chris,

At our meeting on Wednesday, we discussed the inlet pressures for the HTHW generators. As part of the discussion, you questioned the existing HTHW pump curve that was attached to the response to RFI 12 and said that you would verify that it was the correct curve. We have not yet received an updated curve of confirmation

Attachment 7 (2 Pgs)

CORPORATE OFFICE 1111 Willis Avenue • Wheeling, Illinois 60090-5841
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INDECK®
POWER EQUIPMENT COMPANY

June 8, 2010

Mr. Laji George
Project Manager
GDS Mechanical Inc.
Morris Plains, NJ 07950

Subject: Final Design Parameters Clarifications

References: Port Authority RFI #15 and Indeck RFI-2552-002

Dear Mr. George:

Indeck Power Equipment Company, ("Indeck") has completed the review and analysis of the new operating parameters as stated in Port Authority's RFI #15 response, (dated 05/19/10) and Indeck's Request for Information response RFI-2552-002, (dated 05/26/10).

The overall results show that only minor changes need to be made in order to accommodate the performance requirements of RFI # 15. The design takes into account the final and specific operating point required by the Port Authority and is reflected in the attached predicted performance run calculations (G2552_Gas_Oil_Performance_Rev.6b). Specifically, the changes will accommodate the revised flow rate of 890 GPM at the HTHW generator water inlet. Once the HTHW generator design is modified to meet the revised conditions set forth in RFI #15, the generator will no longer be able to meet the original operating requirements previously specified by the Port Authority and proposed in the Indeck's quotation QU00020463Rev.3. The minor design changes represent no additional cost in Indeck's proposal price. These modifications fall under typical engineering practices for site specific tuning that occur after a purchase order is created for the project. Nevertheless delaying the approval of the final operating conditions has a direct impact in Indeck's design/drafting schedule.

Given that the HTHW generator will operate continuously firing natural gas and intermittently (10 day/year or less) firing No. 2 Fuel Oil with a inlet water flow of 890 GPM and an outlet water temperature of 375°F, Indeck recommends a steady-state inlet water pressure of at least 206 psig. It is stated in answer RFI #15, that operation during transients may cause the water inlet pressure to drop as low as 205 psig. Although this operating pressure may drop below our recommended threshold (206 psig) during transients, it is our understanding that current site practices (including water chemistry control, operating procedures, HTHW generator duty loading, and system operation) have lead to long term successful operation of similar equipment in regard to water side fouling. Given the end user's successful track record in regards to minimal water side fouling of like equipment, Indeck has no legitimate reason to require a higher operating pressure in order to meet the requirements as clarified by RFI #15 and RFI-2552-002.

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INDECK®
POWER EQUIPMENT COMPANY

Should in the future the Port Authority elect to fire #2 Fuel Oil on a more regular basis we would recommend increasing the system water pressure to the boiler inlet/outlet pressures at or above as 214.9/203 psig, respectively.

Sincerely,

James Molina
Project Manager
Indeck Power Equipment Company

Attachment

CC: Greg Wassilkowsky
Dave Smith
Richard Gorczynski
Chris Nystrom

Attachment 8
3 pgs

GDS MECHANICAL, INC.

June 7, 2010

Michael C. Wallace, P.E.
Senior Resident Engineer
Building #125, Central Terminal Area
Newark, NJ 07114

RE: Newark Liberty International Airport – Contract EWR 910.829
Response to your letter dated June 4th 2010

Dear Mr. Wallace,

Please understand that GDS Mechanical, Inc shares the same concerns of the Port Authority regarding the progress of this contract. In response to your June 4, 2010, letter, there were points that were left out that GDS would like to clarify. Since the start of the submittal phase, there have been numerous changes to the specifications, specifically to the operating pressures, flow rate and temperatures for the HTHW Generators. In addition, there has been misleading information on the reviewed, marked up returned submittals that has lead us to where we are presently. To clarify our position more clearly, I have attached a binder with all relevant information with this letter for your review. To summarize, the items below are in chronological order as filed in the binder:

1. **Specification** : States on page 460 that the HTHW system operating conditions as
   Operating Pressure : 400 psig
   Normal Supply Temp Range: 325 – 400 deg F
   Normal Return Tem Range: 250 – 300 deg F

   Page 465 HTHW Generator Design Parameters –
   Design Pressure: 500psig @ 470 deg F
   Operating Pressure: 300 psig @ 400 deg F

   Also with variable flow rate between 1064gpm and 730gpm

2. **Sole Source Letter from Indeck**: Page 7 and also Performance Data page
   Minimum Inlet Pressure: 353 psig
   Inlet Temp: 260 deg F
   Outlet Temp: 400 deg F
   Flow Rate: 759.6gpm

3. **Temporary HTHW Generator Submittal #1**: Since the Temporary had no Specifications to be followed the submittal was based on the design parameters

39 E. Hanover Ave, Suite B1, Morris Plains, NJ 07950
Ph: 973-993-9199 Fax: 972-993-8444

Indicated on the Indeck Sole Source letter as we were under the impression that the sole source letter was the basis of design as per the Plant requirements. Also, if you review the marked up returned submittal, on page 1 of 3 of the trim list there are comments by the reviewer indicating that the pressure should be between 300–350 psig and the flow rate 730gpm.

4. Temporary HTHW Generator Submittal #2: Again on the marked up returned submittal on the first page the reviewer comments that Outlet temperatures are between 350 – 400 deg F and operating pressures between 300 – 400 psig. Also on the trim list page there are comments saying that the system pressure is closer to 325 psig and that the flow rate varies with delta T and pressure.

5. RFI #12: Due to the various conflicting information that was floating around GDS requests to clarify the Min, Normal and Max operating pressures available at the CHRP. The answer indicated in operating condition 1 that there was 285psig available at inlet for a 400deg F outlet temperature, which is a change to the specification that states 300psig@400degF and operating condition 2 of 215psig available at inlet for a 373degF at outlet.

6. Temporary HTHW Generator Submittal #3: After the submittal was sent in and after submitting various requested performance data as follows 325psig@400degF outlet for 50MMBTU/H and 240psig@375degF outlet for 50MMBTU/H, a meeting was requested in which we were asked to provide the max outlet that the generator can give at 285psig inlet pressure and at 215 psig inlet pressure. This information was sent in along with the emissions data and letter stating that the generator can perform at the above conditions. It was the general consensus at this point that the submission was going to get approved; this was when the plant operations pointed out some deficiencies in the general design documents.

7. New conditions are presented: We receive new conditions where GDS is requested to provide performance data for the HTHW Temporary Generator with Flow fixed @ 800gpm, Outlet temp max: 375 deg F and the operating pressure @ 50 psig above sat. pressure at outlet temp. Under these conditions, the proposed temp generator is not able to produce the required 50MMBTUH output.

8. RFI#15: With the vastly changing conditions available with each passing day, GDS requests clarification on operating conditions at the CHRP. The response is as follows – 205psig Inlet pressure, outlet temp of 375 deg F and now the flow is fixed at 890gpm. Obviously available pressures have changed a great deal from 300psig@400degF. If the pressure is translated to 375degFthen the pressure would have to be 220psig. If you review, Indeck RFI No. 2 (GDS RFI No. 16) it is clear that now they have to change their proposed design as per the sole source letter to meet the current operating conditions that have been presented..

9. Two New designs to accommodate the changes for the Temporary Generator were submitted and were approved on a technical stand point.

10. Letter from Indeck stating that they require 215psig @ Inlet for Fuel oil and 206psig at Inlet for Nat. Gas with the changes made to the orifice. It is also clear that the Indeck recommended pressures are not available at the Plant and as stated by Indeck as well that the new parameters are a blatant change to the specification as well as the sole source proposal from Indeck.

11. GDS makes one final attempt to satisfy the PA by trying to get the Rental HTHW Generator available at Indeck. But as stated in the letter from Indeck this generator requires a minimum inlet operating pressure of 265psig which is not available at the plant as per the RFI#15 response.

After reviewing items 1 to 11, one can summarize that the available pressure has changed from 300psig@400degF (or 220psig@375degF) to 205psig inlet pressure at any given temp and a variable flow rate has changed to a fixed flow rate of 890gpm. Also, the max. Outlet temperature has changed from 400deg F to 375 deg F.

With the original suggestion from Indeck that they furnish the first permanent HTHW Generator as a temporary generator rejected by the Port Authority to no clear cut specification for the temporary and the ever changing condition parameters, it is GDS'S position that the Port Authority is just as much culpable in the lack of progress on this project.

GDS Mechanical, Inc has a couple of solutions to propose for the HTHW Temporary Generator to work at the CHRP. Be advised, though, that we have serious concerns about the permanent HTHW Generators as the manufacturer recommended pressures are not available at the CHRP. It is GDS Mechanical, Inc's intention to work with the PA in resolving the situation at hand and to deliver a successful project. Please advise us on how to proceed from this point on.

Respectfully,

Pramod Panackal
GDS Mechanical, Inc.

Attachment 9
3 pgs

COLVIN ENGINEERING ASSOCIATES, INC.
HIGH PERFORMANCE DESIGN

August 17, 2010

PJ Panackal
GDS Mechanical Inc.
39 East Hanover Ave. Ste. B1
Morris Plains, NJ 07950

RE: Newark Liberty Airport – Contract EWR 910.829
Changes to the Temporary HTHW Generator Design Criterion

Dear PJ:

The following is a brief enumeration of relevant changes to the Temporary HTHW Generator design criterion to date:

1. There is no specification for the Temporary HTHW Generator. Note 3 on drawing M201 states that it is "designed and installed by the contractor".

2. Without any contractual obligation, but in an effort to have further guidance, it was decided to pattern the performance for the temporary generator after that specified for the permanent generators in specification Section 15560.

3. Specification Section 15560 paragraph 2.03 H HTHW Generator Design Parameters states:

Output	50,000,000 btu/hr
Design Pressure	500 psig @ 470 °F
Operating Pressure	300 psig @ 400 °F
Primary Condition	
Inlet Water Temperature	300 °F
Outlet water Temperature	400 °F
Flow Rate	1,064 gpm
Alternate Condition	
Inlet Water Temperature	254 °F
Outlet water Temperature	400 °F
Flow Rate	730 gpm

4. Notice to Bidders dated 17 SEP 2009 included the following:

Minimum Inlet Pressure	353 psig
Inlet Water Temperature	260 °F
Outlet water Temperature	400 °F
Flow Rate	759.6 gpm

5. Request for Information Number 12 dated 25 MAR 2010:

   Questioned difference between Section 15560 and Notice to Bidders for minimum, normal and maximum operating pressures.

The response dated 26 MAR 2010 stated that return temperatures would range between 260°F to 300°F and that supply temperatures would range from 300°F to 400°F. The existing pump curve was attached which showed the normal operating condition of 895 gpm at 66.7 ft of head (29 psi).

At this point we would like to limit this letter to the spring/fall conditions which have the lowest inlet pressure to the generator. This is the critical condition which must be considered to prevent boiling in the generator. The winter conditions can easily be satisfied if the spring/fall conditions are met.

Flow diagrams were also attached for mid winter and for spring/fall conditions. The spring/fall inlet conditions for the generator are shown as 330°F and 215 psig.

Note that the written response did not answer the questions directly but made reference to a flow diagram that appears to have questionable data. The existing pump is shown to provide 40 psi but the pump curve shows 29 psi. This would only provide an inlet pressure of 204 psig instead of the 215 psig shown.

6. Chris Nystrom e-mail to Laji George dated 6 MAY 2010 states:

   Maintain Flow at 800 gpm
   Maximum supply temperature is 375°F
   Design inlet pressure is 50 psi above supply saturation pressure (i.e..215 psig).
   Outlet temperature and flow remain constant.

7. Request for Information Number 15 dated 13 MAY 2010:

   Requested confirmation of the operating conditions for the generators.

   The response added a 5% safety factor and gave the following operating conditions:

Flow (constant)	890 gpm
Generator Inlet pressure	205 psig
Generator Inlet temperature range	270 – 330°F
Generator supply temperature	375°F
Approximate output Capacity	50 MMBTU

8. There have been requests for information and responses concerning the design conditions for the Temporary HTHW generator. There have been multiple submissions and review comments. The responses have not been consistent with the original contract documents or previous responses. This is understandable because the design was by contract left to the contractor with no initial criterion but has been developed by the Port Authority during the submittal process.

   With each additional requirement or change the Temporary HTHW Generator design has been updated to comply. This letter does not address the burner or other issues that were taken care of once the criterion was set. This letter only addresses the minimum operating pressure which has had significant impact on the generator design.

   In summary the minimum generator inlet pressures are stated as:

Specified in Section 15560	300 psig
Notice to Bidders 17 SEP 2009	353 psig
Request for Information 12 - 25 MAR 2010	215 psig
Request for Information 15 - 13 MAY 2010	205 psig

HVAC / Energy Efficient Solutions / CFD Modeling / Air Pollution Control
244 West 300 North, Suite 200 / Salt Lake City, Utah 84103-1147 / 801.322.2400 / FAX 801.322.2416

With the specified minimum inlet pressures in the specification and the Notice to Bidders the temporary generator did not need a booster pump. With the reduced pressure in the RFI 12 response a pump is needed. A larger pump is needed to comply with the response to RFI 15.

If correction is made to the flow diagram in RFI 12 for the actual pump pressure of 29 psi and a 5% safety factor is applied the inlet pressure might be as low as 194 psig. This will require an even larger pump for the temporary generator. The existing generators and the specified permanent generators will also need booster pumps for this condition. Possibly the Port Authority should reconsider the operating conditions to accommodate the existing and proposed generators.

9. Each of these changes in design conditions has required time and effort for redesign, The additional cost for redesign, booster pumps, wiring and controls could not have been anticipated based on the original contract documents. Even though the design is noted to be 'designed by the contractor', it has been changed by the Port Authority over the course of several months.

10. In addition to the changes, the approval process has been slowed by the request of the Port Authority to include the piping, stress analysis, supports, auxiliary piping, electrical connections, temporary generator building and stack as part of the submittal package. These additional related items will be submitted but are not needed for approval and release of the generator. The lead time for the delivery of the temporary generator is longer than any of the supporting systems and equipment, The efforts of GDS and the Port Authority should focus on the critical path items first and not be distracted by the other items.

We can be available to answer any questions that the Port Authority may have concerning our response to their comments.

Sincerely,

Frederick N. Broberg, P.E. LEED AP
Senior Project Manager

I:/Projects/2010 Projects/2010-059.00 Newark Liberty Airport/generator changes.docx

Colvin Engineering Associates, Inc.
HIGH PERFORMANCE DESIGN

October 12, 2010

PJ Panackal
GDS Mechanical Inc.
39 East Hanover Ave. Ste. B1
Morris Plains, NJ 07950

RE: Newark Liberty Airport – Contract EWR 910.829
Changes to the HTHW Generator Design Criterion

Dear PJ:

We have reviewed your letter dated October 11th and concur with the information presented which documents the changes in the operating conditions for the HTHW generators. There are changes from the original conditions in Specification Section 15560 to the September 17th Notice to bidders and then to the responses to RFI's 12 and 15. These conditions were further modified in the coordination meeting on August 25th when it was agreed that different conditions could be used for oil fired operation. In September you were informed that the port Authority did not want to use an additional pump for the temporary HTHW generator <this cannot work with the temporary generator outside the building>.

These changes have been taking place for one year. Each change requires redesign of the HTHW generator and the associated system. Even the named sole source manufacturer cannot meet all of the new conditions with the original generator design that was proposed and quoted to the bidders without redesign. Each of these changes in design conditions has required time and effort for redesign, The additional cost for redesign and HTHW generator modifications could not have been anticipated based on the original contract documents.

In addition to the changes, the approval process has been delayed by the request of the Port Authority to include the piping, stress analysis, supports, auxillary piping, electrical connections, temporary generator building and stack as part of the submittal package. These additional related items typically follow the approval of the major equipment which they support. They will be submitted once the generator is approved but are not needed for approval and release of the generator. The lead time for the delivery of the generator is longer than any of the supporting systems and equipment. The efforts of GDS and the Port Authority should focus on the critical path items first.

It is recommended that the Port Authority look closely at the proposed design conditions, taking into consideration the recommendations of the generator manufacturer. They should also review the operating conditions which may have shortened the life of the existing HTHW generators and establish new conditions which will allow reliable operation for many years to come.

We can be available to assist in this review and to answer any questions that the Port Authority may have.

Sincerely,

FNB

Frederick N. Broberg, P.E. LEED AP
Senior Project Manager

HVAC / Energy Efficient Solutions / CFD Modeling / Air Pollution Control
244 West 300 North, Suite 200 / Salt Lake City, Utah 84103-1147 / 801.322.2400 / FAX 801.322.2416

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INDECK®
POWER EQUIPMENT COMPANY

October 13, 2010

Mr. Michael C. Wallace, P.E. LEEP AP
The Port Authority of NY & NJ
Building #125, Central Terminal Area
Newark, NJ 07114
973-622-0800

Subject: Newark Liberty International Airport – Contract EWR-910.829
Central Heating and Refrigeration Plant – Replacement of High Temperature Hot Water Generators

Dear Mr. Wallace,

As requested, Indeck is providing written confirmation to the items addressed in your October 7, 2010 letter to Indeck Power Equipment Company. Responses to the items given in the letter are as follows:

1. Indeck's ability to furnish four high temperature hot water generators in accordance with the Indeck Sole Source Letter and Quotation No. QU00020463, Revision 2, dated September 8, 2009 and in conformance with the PA's Technical Specification Section 15560 and subsequent clarifying RFI's.

At the present time, Indeck certainly has the ability to provide four high temperature hot water generators in accordance with the Indeck Sole Source Letter and Quotation QU00020463 Rev 2. However, Indeck has only been given a Purchase Order for two of the boiler systems, referring to Purchase Order GDS P 801-A as Qty 1 - Unit #3 and Qty 1 - Unit #4. Contractually, Indeck cannot move forward with all four of the specified units as we have no contract to do so from GDS. Indeck is finalizing the Engineering submittals for the two contracted HTHW Generators as well as all of the sub-vendor system equipment. Engineering submittals have been provided to GDS for all of the equipment manufactured by Indeck. Indeck needed written clarification from GDS to move forward with design of the burner, burner windbox, FD Fan components, and windbox mounted fuel trains. Clarification was requested per Change Order Request (COR) G2552-001, dated July 26, 2010. All of these components are designed and manufactured by sub-vendors to Indeck.

Indeck has just recently been given notice to proceed with Change Order Request (COR) G2552-001, dated July 26, 2010, and has released the burner manufacturer to commence engineering and design of the components within their scope of supply to Indeck. Verbal approval from GDS for COR G2552-001 occurred at the September 14th meeting. Written e-mail confirmation from GDS followed on September 15th, 2010 (copy attached). Indeck is proceeding on the basis that the change order is accepted by GDS. To summarize, Indeck has been contracted to provide two HTHW Generator systems. This project has one approved change order as of the September 14, 2010 meeting.

2. The current status of the purchase order between Indeck and GDS.

Currently, Indeck has a signed agreement with GDS per Purchase Order GDS P 801-A, dated March 15, 2010. This agreement is for two, not four, HTHW Generator systems. At the present time, GDS has met their terms of this agreement. One change order, GDS P-930 was provided by GDS on 09/15/2010. This change order was per the Indeck Change Order Request (COR) G2552-001 dated 7/26/2010. To date, and as agreed to by Indeck (per Indeck Invoice IN00134330 dated 9/21/2010) and GDS, PO GDS P 930 is current.

3. The current status of the contractually required submittals for the high temperature hot water generators.

As stated during our on-site meeting, Indeck will provide the required complete package submittals 6 weeks after the burner manufacturer order is released. Release of the sub-vendor order is based on Change Order Acceptance and invoice payment according to specific terms agreed for Change Order #G2552-001. The payment for the first COR invoice arrived to Indeck on October 4, 2010. Based on this, 100 % submittals shall be ready during the week of November 15th.

4. Any additional information that may be relevant to the above.

Indeck has been very concerned about the ability of the Contractor to uphold their end of any Contract. In January 2010, when first contacted by GDS about this project, Indeck tried to ascertain all risks associated with entering a contract of this magnitude with GDS based on the D&B Report and financial information obtained by Indeck. Indeck shared these concerns with GDS and the PA during contract negotiations between Indeck and GDS. The next significant payment milestone for GDS PO 801-A, is at receipt of major pressure part materials - tubes and headers, which is planned for January, 2011. Significant delays with this receivable will cause delays in the project schedule.

Another concern is related to information exchange. It is taking an inordinate amount of time to have RFI's approved and acknowledged. The Change Order Request G2552-001 was made on July 26' 2010 and was not confirmed until September 14/15 as described above. Furthermore, on October 6, confirmation to move forward with procurement of the Engineering design needed by the Indeck sub-vendor was pulled by GDS. Indeck received a notice from GDS instructing us to "Please do not do any procurement of Burner parts or the burner until you get a go ahead from GDS on this."(E-mail copy attached). Indeck had already commenced the procurement process with the sub-vendor based on the September 14/15 previous acknowledgements. Procurement of Burner system includes both the burner manufacturer's engineering and design as well as fabrication of the equipment. Indeck cannot hold procurement of the burner equipment and finalize Engineering Submittals. Indeck will instruct the vendor to hold with fabrication until after Engineering Submittals are approved. However, Indeck is concerned that continued further delays and vacillations to responses for RFI/Clarifications will put the schedule for manufacturing the HTHW Generator systems in jeopardy.

INDECK®

I would like to take this opportunity to thank you for your interest in Indeck Power Equipment Company and look forward to continuing to work in partnership toward a successful project. If you have any questions or need additional information, please let me know.

Sincerely,
INDECK POWER EQUIPMENT COMPANY

David E. Smith
Sales Manager

Cc: J. Molina – Indeck Project Manager
C. Petcos – Indeck Vice President

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INDECK
POWER EQUIPMENT COMPANY

Mr. Laji George
Project Manager
GDS Mechanical, Inc
39 E. Hanover Ave.
Morris Plains, NJ 07950

Date: July 26, 2010

Re: GDS Mechanical P.O. No. GDS P 801A; Indeck Project No. G-2552
Change Order Request G2552-001
Increased size of FD Fan Systems for the HTHW Generators Unit #3 and Unit #4

Dear Mr. George,

Indeck Power Equipment Company, ("Indeck") is submitting this change order to GDS Mechanical, Inc, ("GDS") in the amount of Twenty Five Thousand Three Hundred Twenty Dollars ($25,320.00), to increase the size of the following FD Fan System elements for Units # 3 and #4:

a. Burner Register
b. FD Fan
c. FD Fan Motor
d. FD Fan Silencer
e. Air/FGR Mix Box
f. FGR Duct and Damper

Indeck's engineering department and the Burner manufacturer have determined that the increase in size of the above elements is necessary in order to ensure that the HTHW Generators will meet the operating requirements set forth in RFI #15 and RFI# 2552-002.

This proposal does not include Taxes. Payment terms are upon receipt with copy of change order. All invoice payments are net 30 days at receipt of invoice.

Should GDS elect to have Indeck proceed with this proposal, please forward a change order in the amount of $ 25,320.00 referencing Indeck change order No.G2552-001.

Regards,

James Molina
Project Manger
Indeck Power Equipment Company

David Smith

From: Laji George [LGeorge@GDSMechanical.com]
Sent: Wednesday, September 15, 2010 8:19 AM
To: James Molina
Cc: Mark Chisom; Adam Morian; David Smith; PJ Panackal
Subject: RE: Purchase Order for COR
Attachments: EWR Indeck PO 930[1].pdf

James,

Attached is the Purchase order for the requested change order. Please provide a detailed explanation that would substantiate the need for this change order, as I have to submit this to the PA for review and payment.

Thank you,

Laji George
GDS Mechanical, Inc
Ph: 973-993-9199 Fax: 973-993-8444
lgeorge@gdsmechanical.com

David Smith

From: Laji George [LGeorge@GDSMechanical.com]
Sent: Wednesday, October 06, 2010 3:21 PM
To: James Molina
Cc: Mark Chisom; Adam Morian; David Smith; PJ Panackal; Chris Petcos IKE; mfleder@connellfoley.com
Subject: RE: Purchase Order for COR and Release of Burner

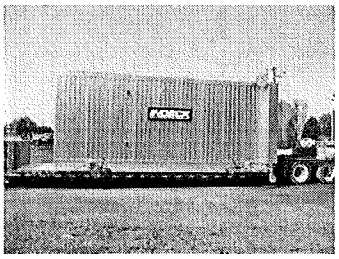
James,

I believe you have received the check for the change order request invoice. Please do not do any procurement of Burner parts or the burner until you get a go ahead from GDS on this. The Port Authority has clearly stated to us in a meeting yesterday that there is no change in specifications and Generator we built them should work according to the specifications. Until we get this issue resolved with the Port Authority please do not proceed with the actual manufacturing of the burner. The check and the purchase order are to be used for submittals only at this time.

Laji George
GDS Mechanical, Inc.

INDECK POWER EQUIPMENT COMPANY • 1111 SOUTH WILLIS AVENUE
WHEELING, IL 60090-5841

June 06, 2011



The Port Authority of NY & NJ
1 Madison Avenue
7th Floor
New York, NY 10010

Reference: Indeck Quotation No. QU00021522 Rev. 0
Sole Source Letter
Site Location: Newark Liberty International Airport

Subject: Sole Source Letter and Indeck Proposal for
High Temperature Hot Water Generator System

Attention: Mr. Peter Zipf

Dear Mr. Zipf:

Indeck Is pleased to provide this firm price quotation QU00021522 to The Port Authority of NY & NJ for the Newark International Airport Project. Indeck has evaluated the information provided in the Division 15 Section 15560, dated 04/29/2011. The attached proposal includes the process, technical, and commercial requirements for this application.

The system has been designed to provide the required high temperature hot water parameters. Installation and all other equipment not specified in the proposal is not included.

We agree that the Port Authority of New York & New Jersey and the Contractor whose proposal is accepted for the Contract shall be the beneficiaries of this agreement and they shall have a direct right of action against us in the event of a breach.

Our offer shall be irrevocable for a period of ninety (90) calendar days after opening of proposals for the project or September 30, 2011 whichever period first expires.

Indeck Power Equipment Company

By:_____ Date:_____
Steven Page
Vice President

Our offer to sell shall be irrevocable for a period of 90 calendar days after opening of proposals for this project or September 30, 2011, whichever period first expires.

Indeck Power Equipment Company

By:_____ Date:_____
Steven Page
Vice President

Indeck Quotation No. QU00021522 Rev 0

The Port Authority of NY & NJ

Newark Liberty International Airport

Newark, NJ 07114

Package Boilers and Ancillary Equipment

June 06, 2011

CONFIDENTIAL – DO NOT DUPLICATE

1. EXECUTIVE SUMMARY

1.1. INDECK GROUP OF COMPANIES

The Indeck Group of companies designs and manufactures a complete line of industrial watertube shop assembled packaged boilers and field-erected boilers. Indeck has supplied over 5,000 boiler systems in over 25 countries. Typical fuel sources utilized are Gas, Oil, Biomass, Waste Heat and Solid Fuels. Large capacity designs of up to 1,000,000 pounds per hour of steam are available.

Indeck Power Equipment Company has the largest inventory of boilers for sale, lease, or rental in the North America. Stock sizes range to over 250,000 pounds per hour of steam. A huge selection of boiler components is always available for immediate shipment.

Indeck's boiler design group, Indeck Keystone Energy has a history dating back to the 1840's as Erie City Iron Works, Zurn Energy Division, and Aalborg Industries. Indeck Keystone Energy has engineering, graphics and project management skills which are recognized as leaders in our industry.

Indeck's manufacturing group, Indeck Boiler Corporation has history dating back to the 1920's as Volcano. Indeck also has the International Boiler Works designs through our Volcano acquisition. Indeck Boiler Corporation has long been known as a source of quality manufacturing of boilers.

Indeck is the home to many of the most trusted boiler designs ever built. You can find the top industry trade names of Volcano, Erie City, Zurn, Aalborg, IBC and International Boiler Works all under one roof. Manufactured styles include "A", "O", "D", Modular "D" type boilers along with the Lamont line of High Temperature Hot Water Generators.

From concept to start-up Indeck has the design and manufacturing experience to offer steam systems that are built to your exact specification. Typical system components include boiler, fans, burner, trim, UL listed controls for burner, combustion management and feedwater control, stacks and emission reduction equipment. Our ASME certified designs and in-house quality control program are second to none.

In addition, Indeck Power Equipment Company also offers rental power plant equipment for emergencies, scheduled outages, or increased capacity requirements. Indeck Power Equipment Company also supplies mobile steam systems, trailer designed watertube boilers, diesel generators, air and water cooled chillers and emergency deaerators. Our emergency telephone line 800-446-3325 is open 24 hours per day. Be assured we are at the ready should an urgent need arise.

Indeck has what it takes to be your #1 supplier. Our team of qualified professionals is at the ready to serve you. With over $70,000,000.00 invested in our equipment inventory, delivery is never a problem.

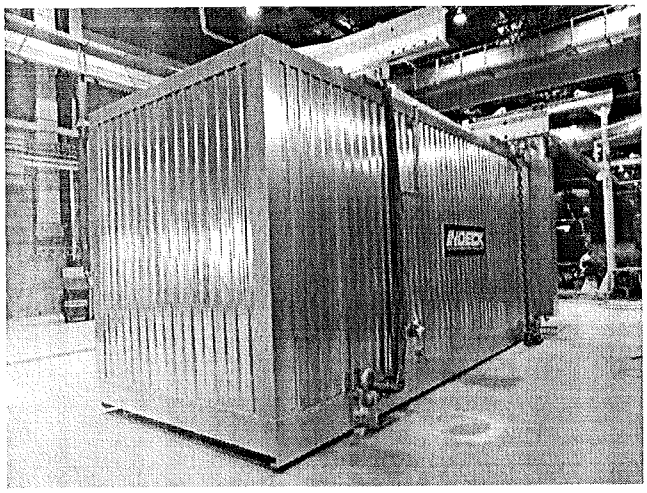
1.2. INTRODUCTION

This proposal provides the scope of supply and commercial terms for equipment and engineering services whereby Indeck proposes to design and fabricate three (3) package HTHW Generator boiler systems for the Owner who is defined as The Port Authority of NY & NJ for the Newark Liberty International Airport Project. The proposed design of the equipment is based on the request for quote Division 15 Section 15560 dated 04/29/2011.

Each HTHW Generator has been designed for Natural Gas and #2 Fuel Oil backup firing and indoor placement located in the city of Newark, NJ. The scope of supply is detailed in Section 2. The general arrangement of the equipment is detailed in the drawings in Section 4. The drawings are preliminary in nature and are for reference only at this time. Actual sizing of the equipment will be provided during the design phase of the project.

The schedule provided in Section 6 defines typical milestone dates for documents and equipment deliveries. Once a Contractor (Buyer) is identified and an overall project schedule determined, Indeck will work with the Buyer to meet the deliverables. The schedule to be provided by Indeck will be determined based on Engineering and Shop Loading at time of order. Indeck would like the opportunity to discuss the schedule in more detail in an effort to ensure we meet the project delivery requirements.

With over 1,050 HTHW Generators and 5,000 watertube package boiler systems in commercial operation worldwide, Indeck utilizes our proven design standards to help lower cost while meeting the performance requirements and maintaining a high quality product. Installation, erection services and materials are not included. Exceptions and clarifications to the RFQ are specified in Section 7.



1.3. BOILER DESIGN DATA

Design Conditions for the HTHW Generator is as follows:

Case	Base Offer
Boiler Type	International LaMont®
Model Nos.	TJW-C-50
Number of HTHW Generators	3
Heat Output, MMBTU/hr	50,000,000
Operating Pressure, PSIG	205
HTHW Generator Design Pressure, PSIG	500
Thermal Fluid Outlet Temperature, °F	375
Thermal Fluid Inlet Temperature, °F	260
Thermal Fluid Pressure Drop (economizer), PSIG	3.0
Thermal Fluid Pressure Drop (boiler), PSIG	8.9
Ambient Temp, °F	80
HTHW Generator Location	Indoors
Boiler Turndown	10:1
Main Fuel	Natural Gas
Alternate Fuel	No. 2 Fuel Oil
NOx at Stack, ppmvd @ 3% O_2	41
CO at Stack, ppmvd @ 3% O_2	50
Furnace Liberation Rate, BTU/cu ft/hr	60,634
FGR (deg F at % of flue gas flow)	297F @ 30%
Air / FGR Mixture Temperature, deg F	132
Boiler Draft Loss at MCR, in.wc	3.2
Corrosion Allowance	----------
Tubes – HTHW Generator	0"
Tubes – Economizer	0"
Headers	0"

1.4. FEATURES AND BENEFITS

Indeck is the industry leader in the design and manufacture of HTHW systems and is the original manufacturer of the IBW – International Boiler Works product line of the International-LaMont® HTHW Generators. The advantages of the International LaMont HTHW Generator include:

- **Forced Circulation**
- **Designed for High Temperature Hot Water**
- **Proprietary Design to Minimize Stresses and Fatigue Damage caused by Thermally Induced Stress Cycling**
- **Capable of High Temperature Differentials**
- **High Efficiencies**
- **Low Maintenance**
- **Completely Factory Packaged**
- **Safe Operation**
- **Compact Design**

The forced circulation, equal flow distribution of the International-LaMont® design allows the unit to have turbulent flow and higher velocities throughout the entire heating vessel and guarantees proper and efficient heat transfer with no hot spots or steaming. In addition, the International-LaMont® was specifically designed to handle large differentials between inlet and outlet temperatures. One-hundred fifty degree (150°F) differentials are common. The International-LaMont® HTHW Generator was specifically designed to maximize all factors: heat transfer, combustion and operating costs to give the end-user the most efficient unit to operate possible.

It is a forced circulation tangent tube hot water generator that was *specifically designed to produce high temperature hot water*. IT IS NOT A MODIFIED STEAM BOILER.

The tangential tube design and configuration is such that the unit will never experience fatigue failure caused by thermally induced stress cycling, even with large temperature differentials. The tangent tube furnace wall design and the furnace target plate will reduce down-time and operating expenses by virtually eliminating the use of refractory in the combustion chamber. The system does not require any additional blending pumps or blending stations to handle large temperature differentials.

In other manufacturers' designs, the potential for fatigue failure caused by thermally induced cyclic stresses are due to the resistance of the boiler structure to movement caused by thermal expansions and contractions within the boiler. The stresses occur every firing cycle (burner on, burner off), in varying magnitudes. Failures of this type may appear as leaks at the tube-to-tubesheet joints, cracked tubesheet ligaments, broken stays or membrane wall failures. Obviously failures of this type can be extremely serious in terms of downtime and repair costs.

The International-LaMont® design is unmatched in its ability to produce high temperature hot water safely, because of the forced circulation watertube design and the use of inlet manifold orifices guaranteeing balanced flow distribution throughout. Additionally, the unit's compact design, requiring less floor space and lower head room, allows for better multiple unit installations and lowers operating expenses and construction costs.

The system has been designed to provide the required high temperature hot water parameters while meeting the emission requirements set forth in the bid specification. Installation and all other equipment not specified in the proposal are not included.

1.5. CONTACTS

Please direct any questions concerning this proposal to:

David Smith
Sales Engineer
Indeck Power Equipment Company
1111 Willis Avenue
Wheeling, IL 60090 USA

Phone: 847-541-8300 x 3511
Fax: 847-541-9984
Email: dsmith@indeck-power.com

If the above Sales Engineer is unavailable, please feel free to contact:

Gary E. Blazek
Director of Business Development
Indeck Keystone Energy, LLC
5340 Fryling Road, Suite 200
Erie, PA 16510-4672 USA

Phone: 814-464-1203
Fax: 814-897-1089
Email: gblazek@indeck-keystone.com

The Indeck sales representative in your area is:

Jim Gooch
Gooch Equipment Marketing, Inc.
1221 Route 22 East
Lebanon, NJ 08833

Phone: 908-236-9350
Fax: 908-236-9333
Email: jimgooch@earthlink.net

2. SCOPE OF SUPPLY

2.1. SCOPE SUMMARY

Indeck's proposal is based on the following division of work as defined in the following scope summary chart.

ITEM	MATERIAL			INSTALLATION BY	
	INDECK	BUYER	OPTION	INDECK	BUYER
HIGH TEMPERATURE HOT WATER GENERATOR					
HTHW GENERATOR PROPER	X				X
INTEGRAL STEEL BASE	X			X	
HEADERS	X			X	
FURNACE	X			X	
CONVECTION ZONE	X			X	
REFRACTORY SEALS	X			X	
INSULATION	X			X	
CASING AND LAGGING w/ 12 TEMPERATURE SENSORS	X			X	
HTHW GENERATOR TRIM					
GENERAL TRIM PER ENCLOSED LIST	X			PARTIAL	X
SAFETY VALVE	X				X
FUEL FLOW CONTROL VALVE	X			X	
BURNER SYSTEM					
WINDBOX	X			X	
BURNER	X			X	
BURNER MANAGEMENTS SYSTEM (BMS)	X			X	
FUEL TRAINS – WINDBOX MOUNTED	X			X	
FUEL PRESSURE REGULATING VALVES		X			X
FUEL OIL PUMP AND POSSIBLE HEATER SETS		X			X
FUEL HANDLING SYSTEM UPSTREAM OF FUEL TRAIN		X			X
FAN SYSTEM					
F.D. FAN	X				X
F.D. FAN SILENCER	X				X
F.D. FAN INLET STEAM COIL AIRHEATER	N/A				
F.D. FAN MOTOR	X				X
F.D. FAN STEAM TURBINE DRIVE	N/A				
LUBE OIL SYSTEM	N/A				

ITEM	MATERIAL			INSTALLATION BY	
	INDECK	BUYER	OPTION	INDECK	BUYER
COMBUSTION AND F.W. CONTROLS					
INSTRUMENTS	X				X
HUMAN TO MACHINE INTERFACE PANEL	X			X	
COMBUSTION CONTROL PANEL	X				X
DCS CONTROL SYSTEM		X			X
ECONOMIZER					
ECONOMIZER	X				X
ECONOMIZER FEEDWATER BY PASS SYSTEM (I.E. PIPE, TWO SHUT OFF VALVES, ONE BY PASS VALVE AND SAFETY RELIEF VALVE WITH PROPER VENTS AND DRAINS	N/A				
DUCTS AND STACK					
COMBUSTION AIR DUCTS (SILENCER TO FD FAN MIXBOX)	X				X
AIR DUCTS (FD FAN TO BURNER WINDBOX)	N/A				
GAS DUCT (BOILER TO ECONOMIZER)	N/A				
GAS DUCTS (ECONOMIZER TO STACK TRANSITION)	X				X
GAS DUCTS (SCR DUCTS)	N/A				
STACK - (BY OTHERS)	N/A				
FGR DUCT	X				X
INSULATION AND LAGGING ON WINDBOX, DUCTS & STACK		X			X
EXPANSION JOINTS					
FD FAN OUTLET	N/A				
BOILER OUTLET	N/A				
SCR OUTLET	N/A				
ECONOMIZER OUTLET	N/A				
FGR DUCT	X				X
DAMPERS					
FD FAN	X				X
FD FAN VIV	X				X
FD FAN OUTLET (WINDBOX)	N/A				
STACK INLET	X				X
FGR	X				X

ITEM	MATERIAL			INSTALLATION BY	
	INDECK	BUYER	OPTION	INDECK	BUYER
WALKWAYS AND LADDERS					
PLATFORM AND LADDER AS DEFINED IN PROPOSAL		X			X
SUPPORT STRUCTURES					
FOUNDATION, SLIDE PLATES, SHIMS & ANCHOR BOLTS, NUTS, WASHERS		X			X
FD FAN INLET DUCT SUPPORT STEEL		X			X
SCR SUPPORT STEEL	N/A				
ECONOMIZER INTEGRAL BASE	X				X
ECONOMIZER SUPPORT STEEL STRUCTURE	N/A				
STACK SUPPORT STEEL STRUCTURE		X			X
PIPE SUPPORT STEEL		X			X
DUCT SUPPORT STEEL		X			X
PIPING					
INSTRUMENTATION THERMOWELLS	X			X	
INTERCONNECT (Z-PIPE) FROM ECONOMIZER TO BOILER	X				X
VENT ECON INLET 1 ST VALVE TO VENT TERMINAL POINT		X			X
VENT HTHW GENERATOR HEADERS 1 ST VALVE TO VENT TERMINAL POINT		X			X
VENT THERMAL FLUID OUTLET 1 ST VALVE TO VENT TERMINAL POINT		X			X
VENT SAFETY VALVE OUTLET TO VENT TERMINAL POINT		X			X
VENT N.G. FROM FUEL TRAIN TO VENT TERMINAL POINT		X			X
DRAINS FROM FIRST VALVE TO SITE DRAIN		X			X
ECONOMIZER DRAIN TO 1ST VALVE	X			X	
ECONOMIZER DRAIN FROM 1 ST VALVE TO SITE DRAIN		X			X
FUEL PIPE FROM FUEL SYSTEM TO FUEL TRAIN		X			X
FUEL PIPE FROM FUEL TRAIN TO BURNER	X				X
INSULATION AND LAGGING FOR PIPE		X			X
SUPPORT HANGERS AND SUPPORT STEEL FOR PIPE		X			X
AIR POLLUTION AND EMISSIONS CONTROL					
CO CATALYST	N/A				
SCR SYSTEM	N/A				
SCR AMMONIA INJECTION GRID (AIG)	N/A				

ITEM	MATERIAL			INSTALLATION BY	
	INDECK	BUYER	OPTION	INDECK	BUYER
SCR PIPE FROM AIG TO AFCU	N/A				
SCR AMMONIA FLOW CONTROL UNIT (AFCU)	N/A				
SCR PIPE FROM AFCU TO STORAGE TANK & PUMP	N/A				
SCR AMMONIA STORAGE TANK AND PUMP SYSTEM	N/A				
SOOTBLOWER SYSTEM					
SOOTBLOWER PORTS	X			X	
SOOTBLOWERS	N/A				
AUXILIARY EQUIPMENT & MISC					
INTERCONNECTING WIRING, CONDUIT, RACEWAYS, TUBING AND JUNCTION BOXES		X			X
INTERCONNECTING CONTROLS COMMUNICATION CABLING SYSTEM AND ASSCOIATED ACCESORIES		X			X
COMPRESSED AIR WITH ASSCIATED TUBING / PIPE		X			X
COMPRESSED AIR FOR ATOMIZATION AND SOOT BLOWERS		X			X
ALL POWER SUPPLIES		X			X
MOTOR STARTERS, VFDs, AND MCCs		X			X
EXPANSION TANK		X			X
NITROGEN PRESSURIZATION SYSTEM		X			X
HTHW GENERATOR PRIMARY PUMPS		X			X
THERMAL FLUID SYSTEM DISTRIBUTION PUMPS		X			X
CONTINUOUS EMISSIONS MONITORING SYSTEM		X			X
FINISH PAINT		X			X
SPARE PARTS	X				X
SPECIAL TOOLS – FURNACE CAMERA	X				X
SHELTER FOR FIRING FRONT OR WHOLE SYSTEM WITH ASSOCIATED BUILDING LIGHTING		X			X
FREEZE PROTECTION		X			X
FIELD SERVICE CONSULTANT (DELIVERY, INSTALLATION, START-UP, TRAINING, TEST, ETC)	X			---	---
FREIGHT	X			---	---
UNLOAD EQUIPMENT AT SITE		X		---	---
HAULING FROM TRUCK / RAIL / BARGE UNLOADING POINT TO FOUNDATION		X		---	---
SITE PREPARATION, EXCAVATION, BUILDING MODIFICATIONS, AND INSTALLATION ENGINEERING		X		---	---
PERMITS AND COMPLIANCE TESTING		X		---	---

2.2. TERMINAL POINTS

The terminal points list is intended to define the limits of the scope of supply included in this proposal. Indeck will furnish the equipment and materials inside these terminal points. Indeck scope excludes tubing and wiring unless supplied as part of a skid mounted unit.

HTHW Generator Supply Water Piping

- Water flow orifice plate installed in Buyer supplied thermal fluid piping
- Outlet of HTHW Generator Header flange (HTHW pipe and isolation valves to main header is not included)
- Outlet of safety valve flange on outlet header (vent pipe, drip pan, elbow & silencer is not included)
- Outlet of vent valve on HTHW Generator header or Z-pipe (vent pipe is not included)
- Outlet of misc drain valves (drain pipe to site drain is not included)

HTHW Generator Return Water Piping

- Inlet return water to economizer flange (HTHW Return pipe from system is not included)
- Outlet of intermittent blowdown valve (drain pipe to the blowdown tank is not included)
- Outlet of economizer vent valve (vent pipe to atmosphere is not included)
- Outlet of economizer drain valve (drain pipe to site drain is not included)

Fuel

- Inlet of main and pilot gas fuel trains
- Inlet of fuel oil and air atomization trains
- Outlet of vent relief valve (pipe to safe vent location is not included)

Electrical

- Electric terminals on all field instrumentation, trim, instruments, etc
- Electric terminals on fan motors and applicable damper actuators
- Electric terminals on skids

Air

- Inlet to forced draft fan silencer and ducting
- Instrument process connections on Indeck's individual instruments and applicable damper actuators (tubing is not included)

Structural

- Foundations provided are not included.
- Anchor bolts, shims, slide plates and base plates supplied is not included.

Flue Gas

- Outlet of stack transition duct and damper.

3. DETAILED SCOPE DESCRIPTION

3.1. WATERTUBE STEAM GENERATOR

Indeck is pleased to offer three (3) standard design, Indeck/IBW International Lamont® High Temperature Hot Water Generators, Model **TJW-C-50.** Each HTHW Generator is a shop assembled, watertube high temperature hot water generator (HTHW) including pressure parts, casings, boiler structure, refractory and insulation. The Indeck purpose built design Hot Water Generator (HWG) is constructed in accordance with the ASME Code, Section I for Power Boilers. This HTHW Generator is not a modified steam boiler like a bent-tube, flexible tube boiler and the proprietary design minimizes stresses and Fatigue Damage caused by Thermally Induced Stress Cycling.

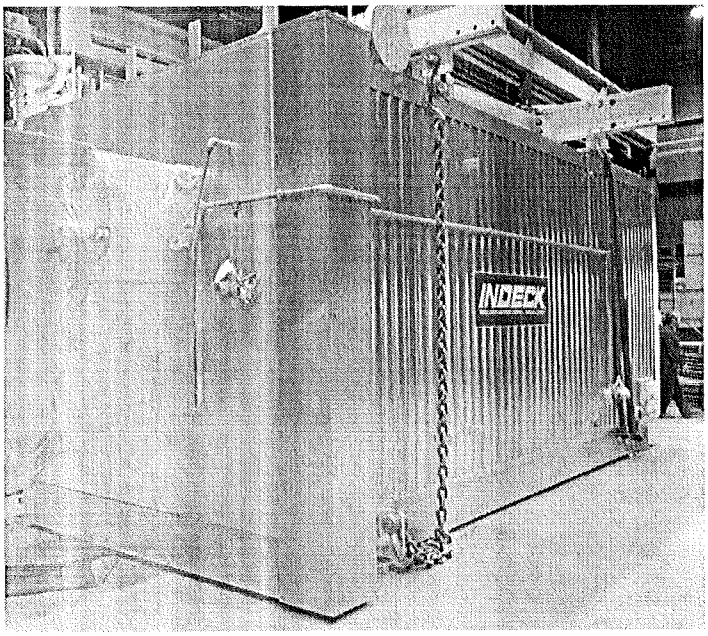
Indeck IBW International Lamont® Design Features:
Hot water forced circulation water tube generators are specifically designed for high temperature water generation and for full utilization of maximum outlet and return water temperature differentials inherent in an efficient HTW system designs.

To avoid uneven heat absorption by different tubes, particularly at low loads, radiant and convective surfaces are arranged in series, not parallel. This extremely important design feature eliminates uneven heat absorption, steaming and resultant tube failure.

The Indeck/IBW International Lamont® design incorporates counterflow of water and combustion gases to provide maximum efficiency and exceptional fuel cost savings. By fully utilizing the low headroom configuration of the Indeck/IBW International Lamont® type generator, designers can realize significant savings, in both construction and on-site handling costs. Factory packaging greatly reduces field labor costs and assures proper coordination of the generator and fuel-burning equipment.

Tangent tube furnace-wall construction virtually eliminates the use of potentially troublesome refractory in the furnace area. Double casing construction, with inner casing seal-welded gas-tight, prevents furnace gases from penetrating to the insulation and outer casing. The unit is submitted to an air pressure test at the maximum furnace pressure with all seams checked with soapy water. The outer casing holds and protects the insulation which, in turn, provides safe, low exterior surface temperatures.

The Indeck/IBW International Lamont® generators are ASME Code constructed, inspected and certified by National Board Insurance and/or Provincial Authority Inspectors. All units are equipped for complete venting and draining. Two observation ports are provided for a visual check of firing conditions with one (12" X16") access door to generator interior. Sootblower(s) bearings and wallboxes are supplied. High velocity fluid circulation is controlled to avoid sedimentations in the tubes and to give extremely fast response to load changes.



Technical Data:	
Boiler type:	Indeck/IBW International Lamont®
Model No:	TJW-C-50
Heat medium:	High Temperature hot water
Maximum Output:	50 MMBTUh
Design pressure:	500 psig
Minimum Inlet pressure:	205 psig
Inlet Water Temperature:	260 °F
Outlet Water Temperature:	375 °F
Flow rate (Model TJW-C-50):	890 Usgpm at inlet fluid conditions
Main fuel:	Natural gas
Secondary fuel:	No. 2 Fuel Oil
Location:	Indoors

Heating surfaces:	TJW-C-50
Furnace (flat proj.): (ft^2)	679
Convection: (ft^2)	3,851
TOTAL: (ft^2)	4,530
Furnace Volume: (ft^3)	992

Furnace dimensions:	
Total Length to Bridgewall (in):	139-1/2
Total Length (in):	165-1/2
Width (in):	97-3/16
Height (in):	97-3/16

Overall dimensions:

Length (casing to casing):	22' 2-1/2"
Width:	9' 3"
Height base to water outlet:	11' 8"

Approx. weight (w/ burner est):

Shipping (lbs):	60,500
Operating (lbs):	68,308

Pressure Parts:	Dia.	MWT	Material
Header:			
inlet:	: 10" NPS	SCH120	SA-106B
outlet:	: 10" NPS	SCH120	SA-106B
Tubes	: 1¼ OD	0.095"	SA-178A-ERW
Economizer Tubes	: 2.0" OD	0.105"	SA-178A-ERW

Refractory, insulation and casings:

Front wall:	5 in. refractory 2 in. ceramic board 6 in. insulating block 3/8 in. min. gas tight outer steel casing
Rear wall:	1 in. ceramic fibre blanket 2 in. ceramic board 2 in. ceramic blanket 3/16 in. steel inner casing 1½ in blanket insulation Aluminium casing stucco finish
Convection side walls:	1½ in. insulation brick (lower section) 1½ in. ceremic board (upper section) 1½ in. insulation block 1 in. ceramic blanket 3/16 in. steel inner casing 1½ in. blanket insulation Aluminium casing stucco finish
Furnace side walls and roof:	3/16 in steel inner casing 3 in. blanket insulation Aluminium casing stucco finish
Headers	2 in. blanket insulation Aluminium casing stucco finish
Floor	¼ in. min. steel inner casing 3 in. blanket insulation
Surface preparation:	SSPC-SP1 & SSPC-SP3
Surface painting	Two coats of standard high temperature paint

The outer casing surface temperature shall not exceed an average of 50°F above ambient temperature with a surface air velocity of 100 ft/min. when the boiler is operating at maximum continuous capacity. The above specified design data may be subject to modifications after final design check.

Hot Water Boiler **Standard Accessories (per unit):**

QTY	SERVICE DESCRIPTION	SIZE	ENDS
2	Outlet header vent valves	1/2"	SW
2	Inlet header vent valves	1/2"	SW
2	Right header vent valves	1/2"	SW
1	Inlet header thermowell for thermometer	3/4"	NPT
1	Inlet header thermometer	1-1/4"	NPT
1	Inlet header test well (capped)	1/2"	NPT
1	Inlet header pressure gauge	1/2"	NPT
1	Inlet header pressure gage isolation valve	1/2"	NPT
1	Inlet header pressure gauge snubber	1/2"	NPT
1	Inlet header pressure test isolation valve	1/2"	NPT
1	Outlet header pressure gauge isolation valve	1/2"	NPT
1	Outlet header pressure gauge	1/2"	NPT
1	Outlet header pressure gauge snubber	1/2"	NPT
1	Outlet header pressure test isolation valve	1/2"	NPT
1	Outlet header thermowell for thermometer	1/2"	NPT
1	Outlet header thermometer	1-1/4"	NPT
1	Outlet header test well (capped)	1/2"	NPT
1	Operating temperature switch thermowell	3/4"	NPT
1	Operating temperature safety cutout switch	3/4"	NPT
1	Excess temperature switch thermowell	3/4"	NPT
1	Excess temperature safety cutout switch	3/4"	NPT
1	Boiler safety valve A	3"X4"	FLG
1	Boiler safety valve B	3"X4"	FLG
1	Orifice plate for pressure transmitter	TBD	-
1	Differential pressure flow switch	1/2"	FNPT
1	Flow transmitter isolation valve A	1/2"	NPT
1	Flow transmitter isolation valve B	1/2"	NPT
1	Flow transmitter three way manifold	1/2"	FNPT
2	Boiler left header drain valves	1-1/2"	SW
2	Boiler right header drain valves	1-1/2"	SW
1	Boiler high furnace pressure switch	1/4"	FNPT
3	Observation ports	2-1/2"	FNPT
1	Boiler gas outlet thermometer	1/2"	NPT
1	Boiler gas outlet thermowell	1/2"	NPT

Trim items listed above are to indicate quality furnished, and Indeck reserves the right to substitute equipment of equal quality. Valves, fittings and accessories which cannot be shop mounted, due to fragility or shipping limits, will be packed separately for installation at the site by the Contractor.

3.2. BURNER SYSTEM

Number of Burners per Boiler:	One (1) per HTHW Generator.
Main Fuel:	
Fuel Type:	Natural Gas
Heat Input:	60.15 mmbtu/hr
High Heating Value	22,699 Btu/lb
Turndown	10 to 1
Pressure at Burner	10 psig
Pressure at Fuel Train Inlet	15 psig (regulated by others)
Excess Air at MCR	15%
Flue Gas Recirculation Rate at MCR	30%
Alternate Fuel:	
Fuel Type:	No. 2 Oil
Heat Input:	57.34 mmbtu/hr
High Heating Value	19,882 Btu/lb
Turndown	8 to 1
Pressure at Burner	150 psig
Pressure at Fuel Train Inlet	150 psig
Excess Air at MCR	15%
Flue Gas Recirculation Rate at MCR	30%
Atomizing Media	Air
Atomizing Media Pressure	125 psig
Piot Fuel:	
Fuel Type:	Natural Gas
Heat Input	1 mmbtu/hr
Pressure at Burner	1 psig
Miscellaneous Data:	
Burner Location	Indoors, non-hazardous
Power Supply Available	120V/1Ph/60Hz 480V/3Ph/60Hz
Instrument Air Available	80 psig
Valve Train Construction	Manufacturer standard
Quality Control	Manufacturer standard

BURNER SYSTEM

Low NOx Burner with windbox including wiring of air and pressure switches.

One (1) windbox will be mounted to the front wall of each HTHW Generator (except for the units required to be field installed) and fabricated of ASTM A-36 carbon steel plate, and complete with required structural framing, support legs, access door, lifting lugs, and baffles for balancing air flow distribution to the burner. The windbox will be provided with an inlet opening for connection to the combustion air duct. The windbox will be painted with manufacturer standard. The windbox will be seal welded to the boiler front plate.

The front plate of the windbox will be shop insulated, with the balance of the windbox to be designed for field insulation which is not included.

One (1) burner, fabricated using standard stainless and mild steel components, complete with the following sub-assemblies, mounted in the windbox:

The following valve trains will include valves, piping specialties and instrumentation as specified below.

All electrical components will be wired to a NEMA 12 terminal box.

Valve trains will be fabricated using Schedule 80 ASTM A-106 Grade B seamless steel pipe and 3,000 lb. threaded fittings.

Insulation and lagging is not included.

- One (1) ignitor gas pilot train
- One (1) main gas train
- One (1) No. 2 fuel oil train
- One (1) compressed air train for No 2 fuel oil atomization

INDUCED FLUE GAS RECIRCULATION SYSTEM

Part of the burner emission control system is an induced flue gas recirculation system. This system will use the FD inlet suction pressure to pull induce flue gas from the stack inlet to the FD fan inlet. This flue gas will then re-circulate through the boiler system to help "cool" the flame and thus lower the NOx formation.

The following will be shipped loose (each per HTHW Generator unit):

1 Lot	IFGR ducting (insulation and support by others)
1	IFGR Flow Control Damper, with actuator
1	IFGR/Air Inlet Mixing Box, for mounting on FD fan inlet

3.3. BOILER CONTROL OVERVIEW

Boiler Control System

The *INDECK* Boiler Control System (BCS) is a proven standard for the control of Indeck Boilers and Hot Water Generators. The system is built upon independent, stand-alone Allen-Bradley CompactLogix PLC processors for the Burner Management System (BMS) and the Combustion Control System (CCS) together in one independent enclosure, and one enclosure per HTHW Generator. The enclosure has an integrated Human-Machine-Interface (HMI), and audible annunciators for alarms and trips. An industrial fast-Ethernet switch is provided in the panel through which data and can be shared with the plant's SCADA system (SCADA implementation by others).

INDECK HMI systems are built upon the Wonderware InTouch application on local 15" Color TFT industrial touchscreen monitors at each boiler, and a remote desktop HMI for the control-room. The remote HMI has all the capabilities of each local HMI simultaneously for each of the boilers/generators. Our experience in both equipment design and plant operation provides the basis for our efficient, operator-friendly HMI screen designs.

The enclosure is NEMA-4 and contains internal lighting and power receptacles for maintenance activities. All panels are pre-wired and tested, and include testing protocol, test results, wiring diagrams, and general-arrangement drawings. We welcome both the Owner and Purchaser to visit us for a Factory Acceptance Test before shipment.

INDECK's Control Systems are engineered, manufactured and tested in our U.L.-Listed Panel Shop and meet or exceed the requirements of NFPA-85.

INDECK uses the following instrumentation components:

- "Smart" HART-compatible 4-20mA transmitters
- Siemens Panel Lamps and Pushbuttons
- Yokogawa Oxygen Analyzers
- Durag Opacity Monitors
- Wonderware InTouch HMI Software
- VarTeck 15" Color Industrial Touchsreen Monitors
- Allen-Bradley CompactLogix family of Processors and I/O Modules
- IDEC Control Relays
- Weidmuller Terminal Systems
- Ingram Alarm Horns

BURNER MANAGEMENT SYSTEM

Engineered, manufactured and tested in our U.L.-Listed Panel Shop to meet or exceed the requirements of NFPA-85, the ***INDECK*** Burner Management System is built on the Allen-Bradley CompactLogix platform. Our system provides First Out Indication, giving extended troubleshooting information to operators and technicians.

All system I/O is fused and can be monitored on the HMI. HMI indication includes, but is not limited to the following:

Low Gas Pressure
High Gas Pressure
Main Gas Shutoff Valves Closure
Gas Flow Control Valve Start Position
Low Oil Pressure
High Oil Pressure
Main Oil Shutoff Valves Closure
Oil Flow Control Valve Start Position
Low Atomizing Media Supply
Low Atomizing Media Flow
Select Fuel
Fuel Changeover
Purge Air Flow
Purge Timing
Purge Timeout
Combustion Air Actuator Positions
Low Combustion Air Flow
FD Fan Motor Interlock
Low Water Flow
Low Instrument Air Pressure
Critical Input Failure
Critical Output Failure
Loss of Start Limits
Low Fire Release
High Water Temperature
Excess Water Temperature
Pilot & Main Lightoff Timing
Flame Detector Relays
Pilot Flame Failure
Main Flame Light-off Failure
Main Flame Failure

The Allen-Bradley CompactLogix PLC directs all of the BMS functions required for automatic start up, shutdown and on-line supervision of the combustion process. Logic implemented in the PLC includes: permissive supervision, furnace purge, master fuel trip, ignition fuel valve management, main fuel valve management, interlock supervision, shutdown, post-purge, critical I/O testing and watchdog timer handshaking.

INDECK's BMS includes the following safety and reliability features:

- Master Fuel Trip Relay circuitry
- Independent Watchdog Timer monitoring of PLC health
- Critical Input and Critical Output testing
- Protection from on-line editing and forced I/O
- Fused inputs and outputs
- Interposing Isolation Relays on all outputs
- "First Out " reporting of all Trip conditions
- Ethernet Communications with Plant SCADA systems

Combustion Control Systems

The *INDECK* CCS is built upon the Allen-Bradley CompactLogix controller using function-block programming. Our system is fully-metered and cross-limited with excess oxygen trim.

- Fully Metered – Characterized inputs for Fuel Flow and Air Flow provide accurate air-to-fuel ratios and precise firing control.
- Cross Limited – Air leads fuel on load increases; fuel leads air on load reductions. Air or Fuel Flow upsets override load demand to maintain safe air-to-fuel ratios.
- Excess Oxygen Trim – Continuous monitoring of stack oxygen and active PID control maintain characterized oxygen levels for increased efficiency and reduced emissions.
- Draft Control
- Plant Master / Boiler Master – Independent Boiler Master for manual, automatic, or biased Lead / Lag operation from a Plant Master. Plant Master control can be enabled from any of the Indeck boiler control panels.

All points of I/O are available to be read by the Plant's SCADA system through the provided fast-Ethernet switch to the Allen-Bradley / Rockwell Automation Ethernet/IP network.

Transmitters, Valve Manifolds, Orifice Plates, RTD's, Thermowells, etc. are provided for:

Combustion Air Flow
Fuel Gas Flow
Fuel Oil Flow
Draft Pressure
Flue Gas Oxygen
Flue Gas Opacity
VFD Speed
Econ. Flue Gas Inlet Temperature
Econ. Flue Gas Outlet Temperature
Water Supply Temperature
Water Return Temperature
Econ. Water Outlet Temperature
Water Flow

Then end-user or their approved representative is invited to Indeck Power Equipment Company's Wheeling, Illinois facilities for a Factory Acceptance Test of the Control Systems.

Human-Machine-Interfaces

INDECK HMI system is built upon the Wonderware InTouch application on a 15" Color TFT industrial touchscreen monitor local to each boiler and a remote desktop HMI for the control-room. The remote HMI has all the capabilities of each local HMI simultaneously for each of the boilers/generators. Our experience in both equipment design and plant operation provides the basis for our efficient, operator-friendly HMI screen designs.

Each HMI is identical, allowing control of any boiler from the panel of any other boiler, providing redundancy in the event of the failure of any single HMI.

Critical actions are initiated by a two-step process to avoid problems created by accidental touchscreen inputs. Help screens provide detailed information for each operator screen, a safe place to clean the touchscreen, and technician's access to PLC and communication status information. Real-time trending and historical-trending provide valuable data to operators, technicians and supervisors.

Critical touchscreen objects appear in the same location from screen to screen. Screens and information follow natural and intuitive sequences, and include such information as:

- Main Menu
- Established Limits
- Light-off Sequencing
- Process Overview
- Boiler / Burner Control
- Totalizers
- Real-Time Trending
- Historical Trending
- Shutdown
- Alarm Management
- Alarm History (including First Out Trip Annunciation and time-stamps)
- Tuning

3.4. INSTRUMENTATION

Indeck has included the following instrumentation (quantity shown is for each HTHW Generator) which will be shipped loose for installation in the field by Buyer:

HTHW Generator water flow transmitter with 3 valve manifold and orifice plate (1)
High furnace pressure switch (1)
Fuel gas flow transmitter with 3 valve manifold and orifice plate (1)
Fuel oil flow transmitter with 3 valve manifold and orifice plate (1)
Air flow transmitter with 3 valve manifold (1)
Economizer feedwater inlet temperature indicator with thermowell (1)
Economizer feedwater inlet temperature element only with thermowell (1)
Economizer feedwater outlet temperature indicator with thermowell (1)
Economizer feedwater outlet temperature element only with thermowell (1)
Economizer feedwater inlet pressure indicator with shut off valve (1)
FD Fan inlet damper drive unit (1)
FD Fan VIV damper drive unit (1)
FGR damper manually operated drive unit (1)
Pressure indicator on FD Fan outlet (1)
Pressure indicator on windbox (1)
Temperature element with thermowell on economizer gas inlet (1)
Temperature element with thermowell on economizer gas outlet (1)
Pressure transmitter on economizer gas outlet (1)
O2 analyzer on economizer outlet (1)
Opacity Monitor (1)
Furnace Camera system (1) with 15" Color LCD Monitor

3.5. F.D. FAN COMPONENTS

Each HTHW Generator will be equipped with an Arangement 4, downblast discharge, centrifugal F.D. fan complete with: 460V/3PH/60Hz TEFC inverter duty motor and VIV for flow control, fresh air/FGR mixing box with damper, inlet silencer to meet 85 DBA at 3 ft. The fan assembly will be mounted on the windbox however, shipped loose to avoid damage during transit. The fan silencer will be shipped loose and will be supported by structural steel provided by others.

3.6. ECONOMIZER (One per HTHW Generator)

Design Pressure	500 PSIG
Tubes:	
• O.D, inches	1.5
• Material	SA-178 Grade A
• Thickness, inches	0.105
Fins:	
• Fins per inch	6
• Fin Solid or Serrated	AEROSEG
• Fin Material	Carbon Steel
• Fin Height	0.75 inch
• Fin Thickness	0.050 inch

Inner Casing	Included
Insulation	Included
Outer Lagging	Included
Lifting Lugs	Included
Flue Gas Temperature, deg F	
• At inlet	501
• At outlet	297
Feedwater Temperature, deg F	
• At inlet	260
• At outlet	269

Included with each economizer is the HTHW Generator interconnect "Z" piping. This piping arrangement is factory welded and designed to accept loads imposed by thermal expansion between the economizer outlet and HTHW Generator inlet flanged connections. Z-pipe offered is SA-106 Gr B material. Interconnect piping is shipped loose for installation and field fit by others. Welding required for field fit are ASME Code, Section I, required welds. Insulation of the Z-piping is provided by others.

3.7. STACK AND TRANSITION DUCTING ASSEMBLY

The stack will need a transition outlet duct from the rectangular economizer outlet to the round stack inlet. The transition ducting will be fabricated with a minimum thickness of 3/16" A-36 carbon steel plate. The transition duct includes an access door, FGR, O2 analyzer, and instrumentation connections. Included with the ducting assembly is a stack damper used for isolation when the unit is maintained in hot-standby operating condition.

The stack for each HTHW Generator is provided by others. Exterior insulation of these components is provided by others.

3.8. WALKWAY SYSTEM

Provided by others.

3.9. SHIPPING CONFIGURATION

The following is a preliminary and approximate shipping configuration.

Component	Shipping Configuration
HTHW Generator with Burner	The boiler is a shop assembled complete with the burner windbox and burner assembly shop installed. The HTHW Generator will ship via truck.
Burner Fuel Trains	The fuel train assemblies are shop assembled to the maximum extent possible and windbox mounted. Some items are shipped loose for field installation provided by others.
Economizer	The economizer is shipped as a shop assembled module. The field installation is not included.
Platform Grating	Provided and installed by Others
Handrail	Provided and installed by Others
Ladders	Provided and installed by Others
Interconnect Z-pipe	Pipe is shipped as a welded assembly to the maximum extent possible. Fittings are shipped loose in bags or boxes. Extra length than is required is made so that the final assembly is field fit. NOTE: Field fit involves ASME Code, Section I, welding and is completed by others.
Fan	The FD fan, motor, VFD and silencer system is burner windbox mounted. Due to shipping constraints, the FD Fan assembly is shipped loose for field installation by others. Additionally, the HTHW Generator Control Panel is shipped loose. The field assembly is not included.
Stack and Rain Cap	Provided and installed by Others
Duct, Dampers, & Expansion Joints	The transition flue gas ducts will be shipped in shop assembled pieces to the maximum extent allowed by a non-permitted non-escorted truck shipment. Field installation, and where necessary exterior insulation, of the transition duct, dampers and expansion joints are not included.
Trim	The field installation of shipped loosed valves and instrumentation is not included (except for components which can be shop installed on the boiler or burner within shipping clearances).

4. PROJECT MANAGEMENT AND START-UP SERVICES

4.1. PROJECT MANAGEMENT

Indeck will furnish the following support services, as required:

- A project manager will have overall responsibility for schedules, inter company coordination, customer relations, attending meetings, monitoring and reporting of project progress.
- A project engineer will coordinate the engineering efforts of the various disciplines, scheduling, distribution of vendor information and report engineering progress.
- A schedule of engineering submittals, procurement activities, and construction activities, will be updated and submitted to the customer for review.

4.2. OPERATION AND MAINTENANCE MANUALS

Indeck will furnish nine (9) hard copies and one (1) electronic copy of the Operation and Maintenance Manuals together with other documents obtained from suppliers or other sources for all equipment to be supplied.

4.3. FIELD SERVICES

Indeck will furnish qualified field services which included: unloading equipment, construction, commissioning, and training as described on the attached Field Service Schedule for a total of 57 days in two separate visits of equivalent per diem time and expenses. Time and expenses required beyond that as shown on the schedule are offered on a Per Diem basis per the attached Field Service Terms.

4.4. PROPOSAL DRAWINGS

The following drawings are preliminary proposal drawing not for final designs:

Drawing Number	Date and Revision	Description
SK-50MM-001	Revision 0, 04/29/11	General Arrangement
SK-400	Revision 0, 04/29/11	P&ID – Notes and Symbols Sheet
SK-401	Revision 0, 04/29/11	P&ID – Fuel & Air
SK-402	Revision 0, 04/29/11	P&ID – Water

INDECK

IPE Service Estimate

Newark Airport			
Capacity			50 MMBTU
No. of Boilers			3
Saturated or Superheated			HTHW Generator
No. of Fuels			2
Control System			Fully Metered
Control System Supplier			Indeck
Burner Supplier			Coen/Todd
Indeck supplied Peripheral Equipment			Economizer
Labor Rate/Hr	C	Indeck	150

Assumptions

A	All drawings, documentation, forms and procedures are completed outside of this estimate
B	All controls & instrumentation are programmed and tested.
C	All boiler/burner factory acceptance testing is completed prior to start-up.
D	On-site facility acceptance testing time is not included.
E	Boiler construction assistance is not included.
F	ASME PTC 4 acceptance testing time is not included.
G	Boil-Out chemicals are not included.
H	Fan Manufacturer's start-up time is not included.
I	Burner Manufacturer's start-up time is not included.
J	Indeck work will be performed ten hours per day, seven days per week with two travel days per visit at Indeck's standard service rate category "C". Training is to occur concurrently with start-up. If training occurs before or after start up, then the additional cost is on a time and material basis.
K	VFD Manufacturer's start-up time is not included.

Indeck Service Tech Activity, Visit #1	
1	Travel to Jobsite
2	Safety Orientation, Confined Space Entry, Inspections
3	Punch-List Development
4	Assist preparations and witness field hydrostatic test
5	BMS &CCS Testing, witnessed by client, Boiler #1
6	BMS &CCS Testing, witnessed by client, Boiler #2
7	Start calibration of instruments, loop checks, Boiler #1
8	Finish calibration of instruments, loop checks, Boiler #1
9	Start calibration of instruments, loop checks, Boiler #2
10	Finish calibration of instruments, loop checks, Boiler #2
11	Establish "first flame", boil-out preparation, Boiler #1
12	Training, monitor boil-out, Boiler #1
13	Conclude boil-out, Preparation for characterization runs, Boiler #1
14	Establish "first flame", boil-out preparation, Boiler #2
15	Training, monitor boil-out, Boiler #2
16	Conclude boil-out, Preparation for characterization runs, Boiler #2
17	Operate boiler during tune combustion to high fire (Fuel Oil #2), Boiler #1
18	Operate boiler during characterize controls, test in auto (Fuel Oil #2), Boiler #1
19	Operate boiler during tune combustion to high fire (Gas), Boiler #1
20	Operate boiler during characterize controls, test in auto (Gas), Boiler #1
21	Operate boiler during tune combustion to high fire (Fuel Oil #2), Boiler #2

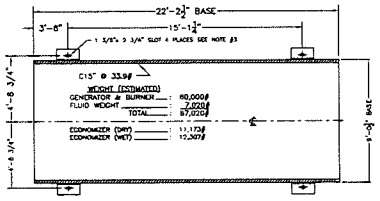
22	Operate boiler during characterize controls, test in auto (Fuel Oil #2), Boiler #2
23	Operate boiler during tune combustion to high fire (Gas), Boiler #2
24	Operate boiler during characterize controls, test in auto (Gas), Boiler #2
25	Process Loop Tuning, Boiler #1
26	Process Loop Tuning, Boiler #2
27	Operator Training
28	Operator Training
29	Operator Training
30	Travel from Jobsite

Indeck Service Tech Activity, Visit #2	
31	Travel to Jobsite
32	Safety Orientation, Confined Space Entry, Inspections
33	Punch-List Development
34	Assist preparations and witness field hydrostatic test
35	BMS &CCS Testing, witnessed by client, Boiler #3
36	BMS &CCS Testing, witnessed by client, Boiler #4
37	Start calibration of instruments, loop checks, Boiler #3
38	Finish calibration of instruments, loop checks, Boiler #3
39	Start calibration of instruments, loop checks, Boiler #4
40	Finish calibration of instruments, loop checks, Boiler #4
41	Establish "first flame", boil-out preparation, Boiler #3
42	Training, monitor boil-out, Boiler #3
43	Conclude boil-out, Preparation for characterization runs, Boiler #3
44	Establish "first flame", boil-out preparation, Boiler #4
45	Training, monitor boil-out, Boiler #4
46	Conclude boil-out, Preparation for characterization runs, Boiler #3
47	Operate boiler during tune combustion to high fire (Fuel Oil #2), Boiler #3
48	Operate boiler during characterize controls, test in auto (Fuel Oil #2), Boiler #3
49	Operate boiler during tune combustion to high fire (Gas), Boiler #3
50	Operate boiler during characterize controls, test in auto (Gas), Boiler #3
51	Operate boiler during tune combustion to high fire (Fuel Oil #2), Boiler #4
52	Operate boiler during characterize controls, test in auto (Fuel Oil #2), Boiler #4
53	Operate boiler during tune combustion to high fire (Gas), Boiler #4
54	Operate boiler during characterize controls, test in auto (Gas), Boiler #4
55	Process Loop Tuning, Boiler #3
56	Process Loop Tuning, Boiler #4
57	Travel from Jobsite

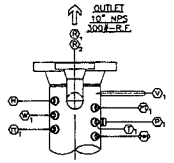
Breakdown of Indeck ST, OT and DT incl days of expenses (refer to activity No.)

No.	Day	ST	OT	DT	Days of Expenses
1	M	8	2	0	1
2	T	8	2	0	1
3	W	8	2	0	1
4	Th	8	2	0	1
5	F	8	2	0	1
6	SA	0	10	0	1
7	SU	0	0	10	1
8	M	8	2	0	1
9	T	8	2	0	1

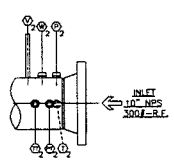
10	W	8	2	0	1
11	Th	8	2	0	1
12	F	8	2	0	1
13	SA	0	10	0	1
14	SU	0	0	10	1
15	M	8	2	0	1
16	T	8	2	0	1
17	W	8	2	0	1
18	Th	8	2	0	1
19	F	8	2	0	1
20	SA	0	10	0	1
21	SU	0	0	10	1
22	M	8	2	0	1
23	T	8	2	0	1
24	W	8	2	0	1
25	Th	8	2	0	1
26	F	8	2	0	1
27	SA	0	10	0	1
28	SU	0	0	10	1
29	M	8	2	0	1
30	T	8	2	0	1
31	M	8	2	0	1
32	T	8	2	0	1
33	W	8	2	0	1
34	Th	8	2	0	1
35	F	8	2	0	1
36	SA	0	10	0	1
37	SU	0	0	10	1
38	M	8	2	0	1
39	T	8	2	0	1
40	W	8	2	0	1
41	Th	8	2	0	1
42	F	8	2	0	1
43	SA	0	10	0	1
44	SU	0	0	10	1
45	M	8	2	0	1
46	T	8	2	0	1
47	W	8	2	0	1
48	Th	8	2	0	1
49	F	8	2	0	1
50	SA	0	10	0	1
51	SU	0	0	10	1
52	M	8	2	0	1
53	T	8	2	0	1
54	W	8	2	0	1
55	Th	8	2	0	1
56	F	8	2	0	1
57	SA	0	10	0	1
Total		336	164	70	57



LOADING DIAGRAM



VIEW "A" NTS



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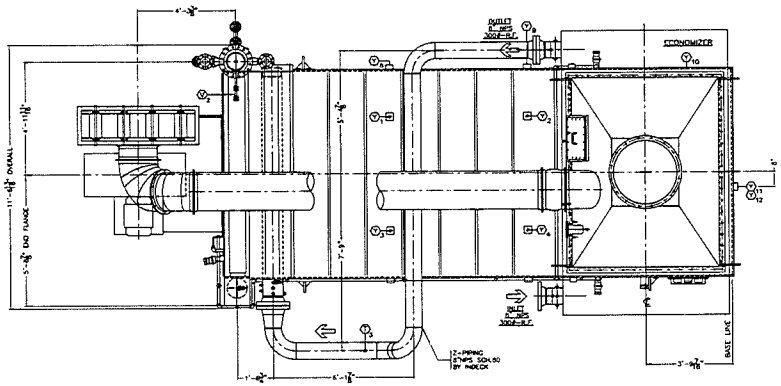
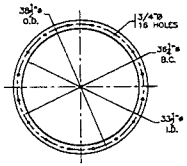
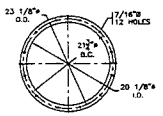


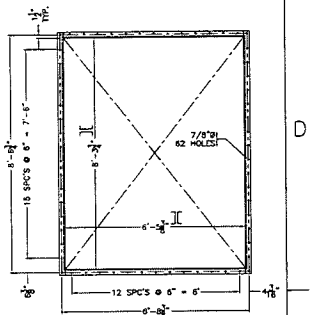
TOP VIEW



STACK FLANGE



F.G.R. FLANGE



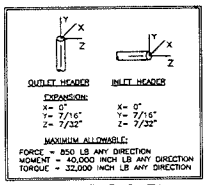
GAS ADAPTOR FLANGE

GENERAL NOTES

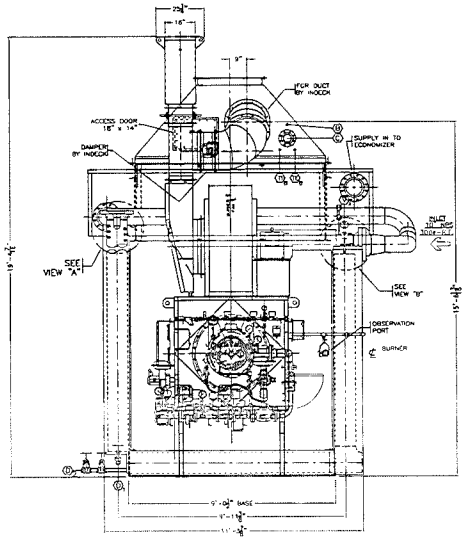
1- DESIGN INFORMATION:
DESIGN PRESSURE= 500 PSIG @ 470°F.
A.S.M.E. SECT. 1.
REFER TO INDECK ANTICIPATED PERFORMANCE DATA SHEET FOR ADDITIONAL INFORMATION.

2- INDECK WILL FURNISH BOLTS AND GASKETS FOR MOUNTING OF:
A) SAFETY RELIEF VALVES TO THE GENERATOR
B) ECONOMIZER & TRANSITION DUCT

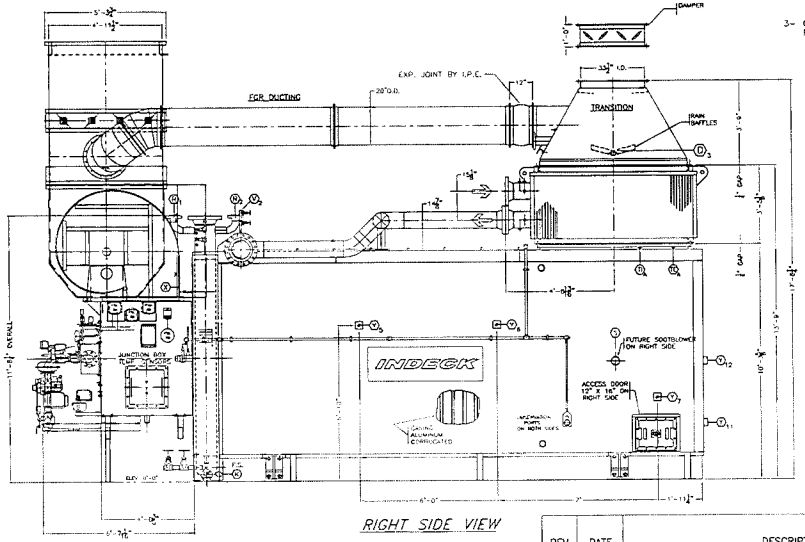
3- CUSTOMER'S ANCHOR BOLTS TO BE DESIGNED FOR 5,100 LBS IN SHEAR.



NOZZLE DATA



BURNER END



RIGHT SIDE VIEW

TRIM CONNECTION LEGEND.

1	TEST PORT	- 3/4" NPT. (PLUGGED)
2	O2 ANALYZER	- 4"-150# R.F.S.O.
3,12	DRAIN	- 1 1/2" SW
4	TRANSITION DRAIN	- 1 1/2" NPT (CAPPED)
5	HIGH OUTLET TEMP. CUTOUT	- 3/4" NPT
6	HIGH HIGH OUTLET TEMP. CUTOUT	- 3/4" NPT
7	CASING DRAIN	- 1 1/2" NPT (PLUGGED)
8,12	PRESSURE GAUGE	- 1/2" NPT
9	OUTLET PRESSURE TRANSMITTER	- 3/4" NPT
10	INLET PRESSURE TRANSMITTER	- 3/4" NPT
11	SAFETY RELIEF VALVE	- 3"-600# R.F. FLGE
11	SAFETY RELIEF VALVE	- 3"-900# R.F. FLGE
13	SOOT BLOWER	- 3 1/2" (CAPPED)
14,12	THERMOWELL	- 3/4" NPT
15	TEMPERATURE ELEMENT	- 3/4" NPT. (PLUGGED)
15	TEMPERATURE ELEMENT	- 1/2" NPT.
15	TEMPERATURE ELEMENT	- 1/2" NPT.
16	THERMOMETER	- 1/2" NPT
16	THERMOMETER	- 1/2" NPT
17	OPERATING TEMP. CONTROL	- 3/4" NPT
18	INLET TEMPERATURE TRANSMITTER	- 3/4" NPT
19	VENT	- 1/2" SW
20,17	TESTWELL	- 3/4" NPT
21	FURNACE PRESSURE	- 1" NPT
22,12	TEMPERATURE SENSORS	-

* ALL FLANGE BOLT HOLES WILL STRADDLE CENTERLINES

FOR PROPOSAL ONLY

DIMENSIONS SUBJECT TO CHANGE
SOME EQUIPMENT OMITTED FOR CLAIRITY

REV	DATE	DESCRIPTION	DRWN BY	APPR BY
0	04/29/11	FOR PROPOSAL ONLY	AAL	AAL

INDECK DWG. NO. SK-001

INDECK

INDECK POWER EQUIPMENT COMPANY, 1111 WILLIS AVENUE, WHEELING, ILLINOIS 60090

I.P.E. QU00021439

50MMBTU GENERAL ARRANGEMENT

ELEVATION AND PLAN VIEW WITH FOUNDATION LOADING

DATE	04/29/11	DRAWN BY	AAL	REV	0	DRAWING NUMBER	SK-50MM-001
SCALE	N.T.S.	CHECKED BY	AAL				

FLOW DIAGRAM ABBREVIATIONS

(USED INSIDE INSTRUMENT BALLONS)

A	ANALYSIS
B	BURNER/COMBUSTION
C	USERS CHOICE
D	USERS CHOICE
E	VOLTAGE
F	FLOW RATE
FQ	FLOW QUANTITY
FF	FLOW RATIO
G	GAUGING (DIMENSIONAL)
H	HAND (MANUALLY)
I	CURRENT
J	POWER
K	TIME
L	LEVEL
M	MOISTURE/HUMIDITY
N	SHUTDOWN
O	UNCLASSIFIED (AS REQUIRED)
P	PRESSURE/VACUUM
PD	PRESSURE DIFFERENTIAL
Q	QUANTITY
R	RADIOACTIVITY
S	SPEED/FREQUENCY
T	TEMPERATURE
TD	TEMPERATURE DIFFERENTIAL
U	MULTIVARIABLE
V	VIBRATION
W	WEIGHT/FORCE
WD	WEIGHT DIFFERENTIAL
X	UNCLASSIFIED (AS REQUIRED)
Y	UNCLASSIFIED (AS REQUIRED)
Z	POSITION

* SELECT FIRST LETTER FROM TABLE ABOVE

*A	ALARM
*AL	ALARM LOW
*AH	ALARM HIGH
*C	CONTROLLER
*CV	CONTROL VALVE (SELF ACTUATED)
*E	ELEMENT (PRIMARY)
*G	GLASS
*I	INDICATOR
*IC	INDICATING CONTROLLER
*IS	INDICATING SWITCH
*IT	INDICATING TRANSMITTER
*L	LIGHT
*O	ORIFICE RESTRICTION
*P	POINT (TEST CONNECTION)
*QI	INTEGRATE OR TOTALIZE INDICATOR
*QR	INTEGRATE OR TOTALIZE RECORDER
*R	RECORDER
*RC	RECORDING CONTROLLER
*RT	RECORDING TRANSMITTER
*S	SWITCH
*SC	SWITCH CLOSED
*SL	SWITCH LOW (ALARM or SHUTDOWN)
*SLL	SWITCH LOW (SHUTDOWN)
*SH	SWITCH HIGH (ALARM or SHUTDOWN)
*SHH	SWITCH HIGH (SHUTDOWN)
*SH/L	COMBINED SWITCH HIGH/LOW
*SE	SAFETY ELEMENT
*SO	SWITCH OPEN
*SV	SAFETY RELIEF VALVE
*T	TRANSMITTER (BLIND)
*V	VALVE
*W	WELL
*X	UNCLASSIFIED
*Y	RELAY OR CONVERTER

A/M	AUTO/MANUAL
BF	BLIND FLANGE
BTU/CU. FT.	BRITISH THERMAL UNITS PER CUBIC FOOT
BTU/HR	BRITISH THERMAL UNITS PER HOUR
CH	FLEX HOSE
CCV	COMBINATION TRIP & THROTTLE VALVE
CO	CHAIN OPERATED
CFM	CUBIC FEET PER MINUTE
C.I.	CHEMICAL INJECTION
CS	CONDENSATE SYPHON
CV	CHECK VALVE
(E)	EXISTING
E/E	END TO END
°F	DEGREES FAHRENHEIT
FC	FAIL CLOSE
FF FLANGE	FLAT FACE FLANGE
FL	FAIL LAST POSITION
FO	FAIL OPEN
GPM	GALLONS PER MINUTE
GC	GOVERNOR CONTROLLER
HHV	HIGH HEATING VALUE
HP	HIGH PRESSURE OR HORSE POWER
HOA	HAND-OFF-AUTO
H. PT.	HIGH POINT
I/A	INSTRUMENT AIR SUPPLY
LB/HR	POUNDS PER HOUR
LC	LOCK CLOSE
LO	LOCK OPEN
LP	LOW PRESSURE
L. PT.	LOW POINT
M	MOTOR ACTUATOR
MW	MOLECULAR WEIGHT
MWP	MAXIMUM WORKING PRESSURE
MWT	MAXIMUM WORKING TEMPERATURE
MAWP	MAXIMUM ALLOWABLE WORKING PRESSURE
MMSCF/D	MILLION STANDARD CUBIC FEET PER DAY
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OP	OPERATING PRESSURE
P	PERSONNEL PROTECTION INSULATION
PD	PULSATION DAMPER
PP	PRESSURE POINT
PSIG	POUNDS PER SQUARE INCH GUAGE
RF FLANGE	RAISED FACE FLANGE
RTD	RESISTANCE TEMPERATURE DETECTOR
S	SOLENOID ACTUATOR
SC	SAMPLE CONNECTION
SCFH	STANDARD CUBIC FEET PER HOUR
SCH	PIPE SCHEDULE
SO	STEAM OUT
SP	SET POINT
SS	STAINLESS STEEL
SP. GR.	SPECIFIC GRAVITY
S/S	SEAM TO SEAM
:	TRAP
TBD	TO BE DETERMINED
T/T	TANGENT TO TANGENT
T/FF	TANGENT TO FACE OF FLANGE
TSO	TIGHT SHUTOFF

FLOW DIAGRAM SYMBOLS

- GATE VALVE
- GLOBE VALVE
- BALL VALVE
- CHECK VALVE
- NEEDLE VALVE
- VALVE NORMALLY CLOSED
- VALVE NORMALLY OPEN
- 3/WAY VALVE
- STOP CHECK VALVE
- ANGLE VALVE
- SAFETY RELIEF VALVE
- PNEUMATIC CONTROL VALVE
- PRESSURE REGULATOR (SELF CONTAINED)
- PRESSURE REGULATOR (MAIN GAS CONTROL)
- MOTOR OPERATED VALVE
- SOLENOID OPERATED VALVE
- FAIL OPEN
- FAIL CLOSED

- ORIFICE PLATE & FLANGES
- "Y" TYPE STRAINER
- STEAM TRAP
- FLEXIBLE HOSE
- INTERLOCK
- LINE SIZE REDUCTION
- CONTINUATION SYMBOL XXX = DRAWING NUMBER
- FLANGED CONN.
- CAP (THREADED OR SOCKETWELD)
- UNION
- BLIND FLANGE

FOR INPUT/OUTPUT OF THE FOLLOWING LISTED BELOW:

DESIGNATION+:

- VOLTAGE
- CURRENT
- HYDRAULIC
- ELECTROMAGNETIC SONIC SIGNAL OR LIGHT BEAM
- PNEUMATIC RESISTANCE

FIELD MOUNTED INSTRUMENT

FOR SYMBOLS NOT SHOWN AND FOR FUTHER REFERENCE SEE ISA STD. ISA-S5.1

- SLOW OPENING VALVE
- QUICK OPENING VALVE
- BY OTHERS
- PLUG
- DRAIN

INSTRUMENT LINE SYMBOLS

- CONNECTION TO PROCESS MECHANICAL LINK OR INSTRUMENT SUPPLY *
  - AS AIR SUPPLY
  - ES ELECTRIC SUPPLY
  - GS GAS SUPPLY
  - HS HYDRAULIC SUPPLY
  - NS NITROGEN SUPPLY
  - SS STEAM SUPPLY
  - WS WATER SUPPLY
- IA — INSTRUMENT AIR SIGNAL
- AS — AIR SUPPLY
- PIPING
- MECHANICAL LINKAGE
- OTHERS

I = SIGNAL TO OR FROM BURNER MANAGEMENT SYSTEM (BMS)

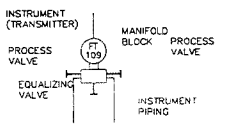
C = SIGNAL TO OR FROM COMBUSTION CONTROLS (CCS)

I/A = INSTRUMENT AIR

XXX / XX — INSTRUMENTS INSTALLED LOCALLY

XXX / XX — INSTRUMENTS MOUNTED ON BOILER FRONT PANEL

ANALOG SIGNAL WIRING



FOR PROPOSAL ONLY

DIMENSIONS SUBJECT TO CHANGE

SOME EQUIPMENT OMITTED FOR CLAIRITY

NOTES:

1 – CUSTOMER TO SUPPLY TUBING AND INTERCONNECT THE AIR SUPPLY FROM THE WINDBOX TO THE 1" COOLING AIR SUPPLY LINE TO BOILER OBSERVATION PORTS.
2 – CUSTOMER TO ROUTE VENT TO A SAFE LOCATION AWAY FROM ANY WINDOWS OR INTAKES.
3 – ORIFICE RUN–REQUIRES STRAIGHT RUN 10 PIPE DIAMETERS UPSTREAM, 5 DIAMETER DOWNSTREAM. ROOT VALVES & FLANGES BY OTHERS.
4 – FROM PROTECTED I/A HEADER.
5 – * DENOTES EQUIPMENT SUPPLIED LOOSE BY I.P.E. ITEMS MARKED BY ◪ ARE SUPPLIED BY OTHERS
6 – SCANNER COOLING AIR 4 SCFM @ 8" WC ABOVE WINDBOX PRESSURE MAX = 17".
7 – REFER TO BURNER DRAWINGS FOR BURNER ARRANGEMENT & CONNECTIONS.
8 – INSTALL PRESSURE SNUBBER PROVIDED BY INDUCK.
9 – CUSTOMER TO VERIFY SIZE, CLASS AND SCHEDULE. ORIFICE FLANGES SHALL BE 300# CLASS.
10 – ALL NON SKID MOUNTED INSTRUMENT PIPING BY CUSTOMER.
11 – MOTOR AUXILIARY CONTACT LOCATED IN CUSTOMER MCC (BY CUSTOMER).

REV	DATE	DESCRIPTION	DRWN BY	APPR BY
0	04/29/11	FOR PROPOSAL ONLY	AAL	AAL

INDECK DWG. NO. SK-401

INDECK®

INDECK POWER EQUIPMENT COMPANY . 1111 WILLIS AVENUE . WHEELING, ILLINOIS 60090

QU00021439

P&ID NOTES AND SYMBOLS SHEET

P&ID SYMBOLS

DATE	DRAWN BY	REV.	DRAWING NUMBER
04/29/11	AAL	0	SK-400
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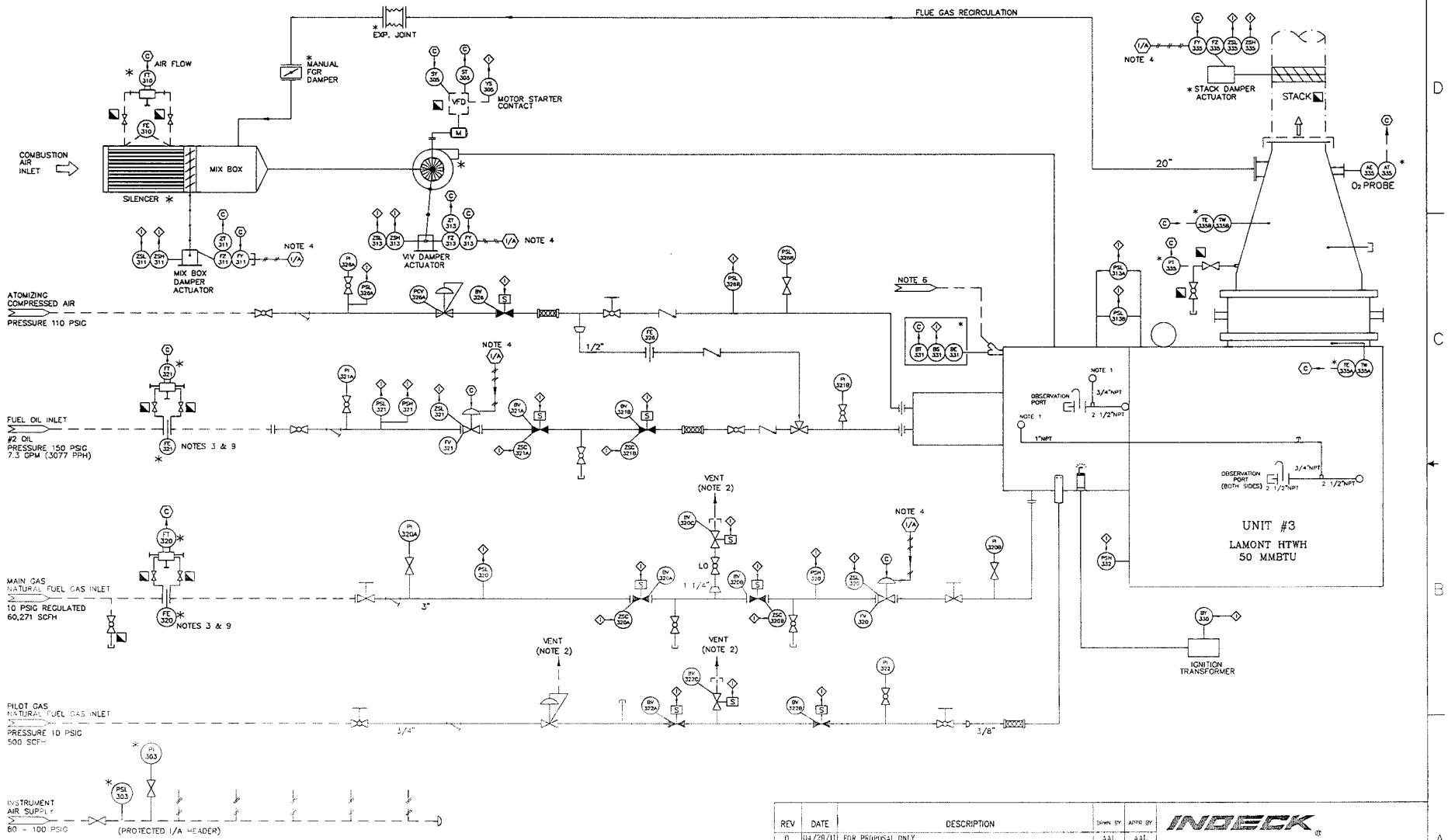


FOR PROPOSAL ONLY

DIMENSIONS SUBJECT TO CHANGE
SOME EQUIPMENT OMITTED FOR CLARITY

REV	DATE	DESCRIPTION	DWN BY	APPR BY
0	04/29/11	FOR PROPOSAL ONLY	AAL	AAL
2				

INDECK DWG. NO. SK-401

INDECK

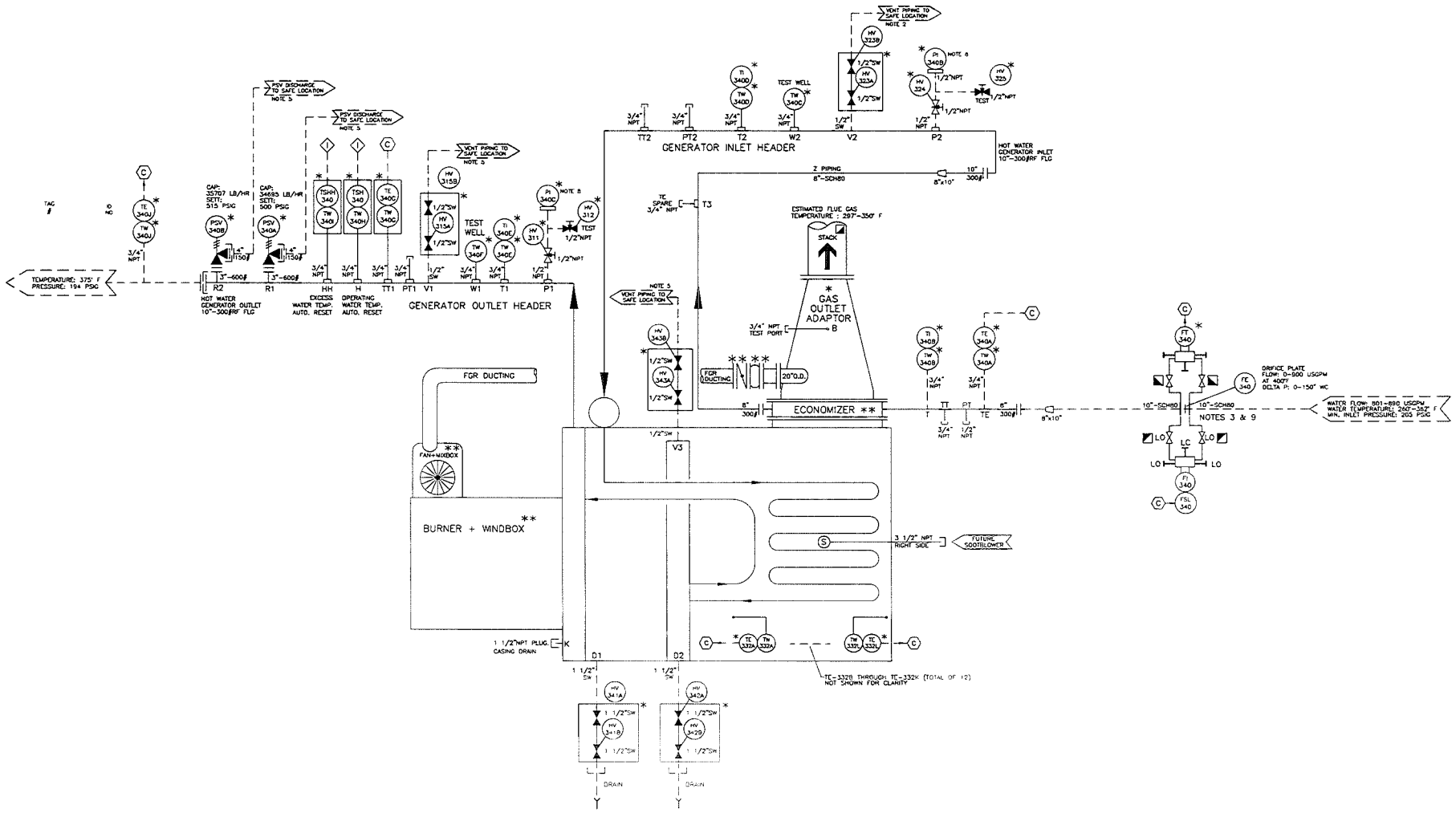
INDECK POWER EQUIPMENT COMPANY · 1111 WILLIS AVENUE · WHEELING, ILLINOIS 60090

QU00021439

P&ID FOR TJW-C-50

P&ID FUEL & AIR

DATE	DRAWN BY	REV	DRAWING NUMBER
04/29/11	AAL	0	SK-401
SCALE NONE	CHECKED BY AAL		



FOR PROPOSAL ONLY

DIMENSIONS SUBJECT TO CHANGE
SOME EQUIPMENT OMITTED FOR CLAIRITY

REV	DATE	DESCRIPTION	DRWN BY	APPR BY
0	04/29/11	FOR PROPOSAL ONLY	AAL	AAL

INDECK DWG. NO. SK-402

INDECK®
INDECK POWER EQUIPMENT COMPANY, 321 WILLIS AVENUE, WHEELING, ILLINOIS 60090

QU00021439

P&ID FOR TJW-C-50

P&ID WATER

DATE	DRAWN BY	REV.	DRAWING NUMBER
04/29/11	AAL	0	SK-402
SCALE NONE	CHECKED BY AAL		

5. PERFORMANCE

5.1. PERFORMANCE

The performance for each Watertube Package HTHW Generator is as detailed below for steady state conditions:

A. Heat Output - The maximum continuous rating (MCR) will be 50.00 MMBTU/hr at the system terminal point firing natural gas and No. 2 fuel oil.

B. Efficiency – The thermal efficiency of the system will not be less than 82% at 100% MCR firing natural gas and 85% at 100% MCR firing No. 2 fuel oil (based on HHV of the respective fuel).

C. Water Temperature - The thermal fluid outlet temperature leaving the HTHW Generator at 100% MCR will be 375 deg F firing natural gas or No. 2 fuel oil.

E. Emissions – The following performance will be extended from twenty-five (25) to one hundred (100) percent of boiler load, provided that the system is operated at steady state conditions.

Maximum emission levels firing natural gas with all concentrations corrected to 3% oxygen, on a dry basis is as follows:

NOx 0.05 lb/mmbtu (41 ppm)
CO 50 ppm (0.037 lb/mmbtu)
VOC 10 ppm (0.004 lb/mmbtu)
PM/PM10 0.005 lb/mmbtu
Opacity 5%, 6 minute time average

Maximum emission levels firing No. 2 fuel oil with all concentrations corrected to 3% oxygen, on a dry basis is as follows:

NOx 0.08 lb/mmbtu (64 ppm)
CO 50 ppm (0.037 lb/mmbtu)
VOC 10 ppm (0.004 lb/mmbtu)
SOx 0.052 lb/mmbtu
PM/PM10 0.03 lb/mmbtu

5.2. BASIS OF THE PERFORMANCE

The above performance values are based upon the following conditions:

1. Operating pressure of the system is 205 psig at the HTHW Generator inlet.
2. Thermal fluid inlet temperature entering economizer is 260°F.
3. Ambient air temperature of 80°F.
4. Relative humidity of 60% at 80°F.
5. System is located at an elevation of less than 10 feet above sea level.
6. The fuel fired shall have an analysis as defined above under burner specifications and included in the attached performance reports 23-Jul-2010.
7. Fuels will be supplied at the required pressures and temperatures.
8. The boiler is designed for indoor installation.
9. This boiler system performance is based on the attached performance reports dated 23-Jul-2010 at steady state conditions.
10. Testing shall be in accordance with "General Performance & Technical Conditions".
11. The boiler water quality shall be per the attached Indeck Recommended Water Quality Limits for Hot Water Boilers.

INDECK

Anticipated Performances Data For "International-Lamont" Hot Fluid Boiler

Project name: Newark Airport	Customer name: NY / NJ Port Authority	Ref #	G-2552

Design conditions

Lamont size: 50	Min Pressure in/out: 205.9 / 194.0 psig	Thermal Fluid Used:	Water
Fuel Fired: Std Natural Gas	Fuel HHV: 22,699 BTU/lb	Site Elevation: 10 FASL	Ambient Air Temp: 80 F

With economizer		Firing Rate			
		100%	75%	50%	25%
Heat Output	MMBTU/hr	50.00	37.50	25.00	12.50
Heat Input	MMBTU/hr	60.15	45.35	30.59	15.81
Boiler Efficiency (HHV) (5)	%	83.1%	82.7%	81.7%	79.1%
Boiler Efficiency (LHV) (5)	%	93.3%	92.9%	92.0%	89.3%
Thermal Fluid Flow (1)(2)	USgpm	890 at inlet fluid conditions			
	lb/hr	417,953	411,763	405,085	397,899
Thermal Fluid Outlet Temperature (3)	deg.F	375.0			
Thermal Fluid Inlet Temperature	deg.F	259.6	283.9	313.3	343.6
Thermal Fluid Pressure Drop in economizer	PSI	3.0	3.0	3.0	3.0
Thermal Fluid Pressure Drop in boiler (7)	PSI	8.9	8.7	8.5	8.2
Excess air	%	15%	15%	15%	25%
Flue gas recirculation (FGR)	%	30%	30%	30%	30%
Ambient air & FGR flow	lb/hr	68,070	51,321	34,619	19,428
Combustion air temperature	deg.F	132.0	133.7	138.0	143.6
Boiler draft loss	in.wc	3.2	1.8	0.9	0.3
Econ draft loss	in.wc	0.4	0.2	0.1	0.0
Fuel flow	lb/hr	2,650	1,998	1,348	696
Estimated Flue gas temp lvg Generator(6)	deg.F	501	457	416	386
Estimated Flue gas temp at econ outlet(6)	deg.F	297	304	322	346
Flue gas flow	lb/hr	54,400	41,015	27,667	15,480
Furnace Heat Release	BTU/hr ft2	88,584	66,789	45,053	23,282
Furnace Liberation Rate	BTU/hr ft3	60,634	45,715	30,838	15,936

Physicals Data			Heating Surface		
Design pressure	Psig	500			
Boiler headers / Z-Pipe & Inlet Piping	NPS	10 / 8	Projected Radiant Furnace Surface	ft2	679.0
Flooded Content	US gallon	936.0	Convective	ft2	3851.0
Unit Dry Weight	lb	60,500	Total Generator	ft2	4530.0
Thermal Fluid Weight At Ambient T	lb	7,808	Furnace Volume	ft3	992.0
Flooded Total Weight At Ambient T	lb	68,308	Convection tube velocity	ft/s	4.4
Orifices quantity and diameter (in)	76	13/16	Furnace tube velocity	ft/s	4.4
Refractory floor	%	0%			

NOTES :
(1) Low flow cutout switch to be set at 801 USgpm (90% of Design Water Flow Rate as measured by inlet water flow meter).
(2) Fluid properties based on inlet water temperature to system.
(3) Maximum Manufacturer's recommended temperature is N/A F.
(4) Ambient air at 60% relative humidity.
(5) Includes 1.0 % manufacturer's margin, A.B.M.A. radiation losses and 0.0 % unaccounted loss.
(6) Flue gases dew point temperature is 142 F
(7) Does not include equipment losses for flow meter, valves, bypass station, or piping unless explicitly stated.

By: A. Morian Version: 2.3.4 Rev 0 Date: 23-Jul-2010

Anticipated Performances Data For "International-Lamont" Hot Fluid Boiler

Project name: Newark Airport	Customer name: NY / NJ Port Authority	Ref #	G-2552

Design conditions

Lamont size: 50	Min Pressure in/out: 205.9 / 194.0 psig	Thermal Fluid Used:	Water
Fuel Fired: Std #2 Oil	Fuel HHV: 19,882 BTU/lb	Site Elevation: 10 FASL	Ambient Air Temp: 80 F

With economizer		Firing Rate			
		100%	75%	50%	25%
Heat Output	MMBTU/hr	50.00	37.50	25.00	12.50
Heat Input	MMBTU/hr	57.34	43.22	29.13	15.03
Boiler Efficiency (HHV) (5)	%	87.2%	86.8%	85.8%	83.2%
Boiler Efficiency (LHV) (5)	%	93.3%	92.9%	91.9%	89.3%
Thermal Fluid Flow (1)(2)	USgpm	890 at inlet fluid conditions			
	lb/hr	417,953	411,763	405,085	397,899
Thermal Fluid Outlet Temperature (3)	deg.F	375.0			
Thermal Fluid Inlet Temperature	deg.F	259.6	283.9	313.3	343.6
Thermal Fluid Pressure Drop in economizer	PSI	3.0	3.0	3.0	3.0
Thermal Fluid Pressure Drop in boiler (7)	PSI	8.9	8.7	8.5	8.2
Excess air	%	15%	15%	15%	25%
Flue gas recirculation (FGR)	%	30%	30%	30%	30%
Ambient air & FGR flow	lb/hr	64,787	48,832	32,916	18,436
Combustion air temperature	deg.F	132.5	134.2	138.6	144.1
Boiler draft loss	in.wc	2.8	1.6	0.7	0.2
Econ draft loss	in.wc	0.3	0.2	0.1	0.0
Fuel flow	lb/hr	2,884	2,174	1,465	756
Estimated Flue gas temp lvg Generator(6)	deg.F	517	470	425	390
Estimated Flue gas temp at econ outlet(6)	deg.F	298	305	323	347
Flue gas flow	lb/hr	52,055	39,235	26,447	14,763
Furnace Heat Release	BTU/hr ft2	84,444	63,648	42,903	22,131
Furnace Liberation Rate	BTU/hr ft3	57,800	43,565	29,366	15,148

Physicals Data			Heating Surface		
Design pressure	Psig	500			
Boiler headers / Z-Pipe & Inlet Piping	NPS	10 / 8	Projected Radiant Furnace Surface	ft2	679.0
Flooded Content	US gallon	936.0	Convective	ft2	3851.0
Unit Dry Weight	lb	60,500	Total Generator	ft2	4530.0
Thermal Fluid Weight At Ambient T	lb	7,808	Furnace Volume	ft3	992.0
Flooded Total Weight At Ambient T	lb	68,308	Convection tube velocity	ft/s	4.4
Orifices quantity and diameter (in)	76	13/16	Furnace tube velocity	ft/s	4.4
Refractory floor	%	0%			

NOTES :
(1) Low flow cutout switch to be set at 801 USgpm (90% of Design Water Flow Rate as measured by inlet water flow meter).
(2) Fluid properties based on inlet water temperature to system.
(3) Maximum Manufacturer's recommended temperature is N/A F.
(4) Ambient air at 60% relative humidity.
(5) Includes 1.0 % manufacturer's margin, A.B.M.A. radiation losses and 0.0 % unaccounted loss.
(6) Flue gases dew point temperature is 130 F
(7) Does not include equipment losses for flow meter, valves, bypass station, or piping unless explicitly stated.

Vtf pgOp/ 3 Pjnjt
jm juf e up 311 i pvst
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By: A. Morian Version: 2.3.4 Rev 0 Date: 23-Jul-2010

5.3. GENERAL PERFORMANCE & TECHNICAL CONDITONS

I. Conditions

The performance data is based on the conditions as stated in the following paragraphs:

A. The equipment shall have been erected in accordance with the Indeck's plans and specifications, properly maintained and operated by the Buyer and /or Owner, and shall be in operating condition satisfactory to Indeck. The heat absorbing surfaces shall be clean inside and out.

B. For steam boilers, the allowable concentration in the boiler water shall not exceed ABMA TABLE 4 Boiler Water Limits and Water Quality Limits Adapted From ASME 1979 Consensus for boiler water quality, feedwater and attemperation water. For hot water generators, the allowable water quality shall meet the Indeck Recommended Water Quality Limits for Hot Water Generators. Refer to the following charts which state these limits. Chemicals used for internal treatment should be supplied to the boiler preferably through a separate boiler connection, used exclusively for that purpose, and in such a manner so as to prevent deposits on drum and tube internal surfaces which would interfere with proper operation. The allowable concentrations above are minimal for the boiler or hot water generator water control and in no way shall be construed as the controlling criteria for any specific installation. Feedwater and boiler water control for any specific installation shall be the responsibility of the equipment operator and /or Buyer's / Owner's feedwater consultant. Treatment should be such as to prevent deposits on the heating surfaces of the boiler or hot water generator as well as the drum internals (if applicable).

C. Samples of water for testing shall be taken from the continuous blowdown, if installed, otherwise through a suitable located sampling pipe. Samples shall be taken through a cooling coil to prevent flashing. Sampling of boiler or hot water generator water shall be done as specified by the methods prescribed in ASTM Publications D1192, "Standard Specification for Equipment for Sampling Water, and Steam", and D3370 "Standard Specification for Equipment for Sampling Water". The determination of the concentrations within the boiler or hot water generator water shall be made in accordance with the proper ASTM Standards.

II. Tests

A. Performance test if required by Buyer shall be run within thirty (30) days after the first fire not to exceed seven (7) months from offer to ship, it being understood that Indeck will require preliminary tests. Tests shall be conducted on one representative unit mutually agreed upon by the Buyer and Indeck. The Buyer, at Buyer's expense, shall make all preparations to furnish all operating and testing personnel and incur all expenses connected with such test, and shall give to Indeck at least fifteen (15) days notice of the date or dates on which tests will be made.

B. Material, labor, fuel, utilities, temporary test equipment, electronic data logger /recorder, and supervision to conduct performance test shall be furnished by Buyer.

C. Indeck's representative shall have access to the records at all times, and the test shall be conducted in a manner to satisfy Indeck that the specified performance conditions are being maintained. A complete copy of test data and results shall be furnished to Indeck in electronic and / or paper format as would be suitable for subsequent analysis and calculations.

GENERAL PERFORMANCE & TECHNICAL CONDITIONS

D. The equipment shall be considered as accepted if tests show that the performance guarantees, if made, have been fulfilled or if the Buyer fails to have said equipment tested within period mentioned. In case of failure to meet performance guarantees, if made, Indeck reserves the right to change, repair or replace the equipment furnished so that required performance guarantees will be obtained. Upon satisfactory completion of performance test, Indeck's responsibility shall be limited to the material and workmanship warranty.

E. Performance tests and analysis (if required) for steaming capacity, operating pressure, steam temperature, and efficiency shall be in accordance with the applicable Performance Test Code (PTC).

For fired boiler systems, Indeck will use ASME PTC 4-1998 Fired Steam Generators. The steam flow shall be measured using a calibrated feedwater flow element with blowdown isolated during the test. The desuperheater flow will be accounted for via a Heat Balance if not measured with a calibrated flow element. The efficiency shall be calculated using the Energy Balance Method limiting the losses to the following items: Dry Gas, Hydrogen and Moisture in Fuel, Moisture in Air, Unburned Combustibles, Radiation and Manufacturer's Margin. The radiation loss shall be per ABMA Standard Radiation Loss Chart. Under no conditions shall the Manufacturer's Margin be used in a punitive manner against Indeck in any acceptance testing or analysis thereof.

For Gas Turbine Heat Recovery Steam Generators, the steam flow shall be confirmed by using the ASME PTC 4.4-1981 (Reaffirmed in 2003) input-output method to verify compliance with any guarantees.

For Waste Heat Boilers, the steam flow shall be confirmed by using the concepts of ASME PTC 4.4-1981 (Reaffirmed in 2003) input-output method to verify compliance with any guarantees. Indeck will provide a method of determining the mass flow through the unit for the specific application.

For hot water generator systems, the heat output and efficiency shall be confirmed by using the PTC 4.1-1964 (reaffirmed in 1991). The abbreviated heat loss method will be used to determine efficiency.

Tests will be conducted using installed plant instrumentation. Any temporary instrumentation required for the test shall be supplied by the Buyer. Calibration of all instruments necessary for testing is the responsibility of Buyer. Calibration records shall be submitted to Indeck prior to testing for use in determining the overall uncertainty of each performance measurement. Measurement uncertainty shall be used as a tolerance in proving compliance with performance guarantees. The performance test shall have a four (4) hour duration with critical measurements taken at mutually agreed upon intervals.

GENERAL PERFORMANCE & TECHNICAL CONDITIONS

F. Emission test (not included by Indeck) shall be performed in accordance with the Federal EPA Code of Federal Regulations (CFR 40 Part 60 Appendix A) which states the following test methods: NOx = Method 7, CO = Method 10, VOC / UBHC = Method 25, Particulate = Method 5. If a local governing authority has different testing criteria, it shall be provided to Indeck for review and comment.
G. Performance calculations shall be based on the steam tables in latest edition of the latest edition of the "ASME Steam Tables."
H. The determination of the fuel or fuels high heating value must be made in accordance with the applicable ASTM Standard.
I. The Unaccounted for Loss and Manufacture's Margin are applied in order to counter conditions beyond the control of the Manufacturer. This value is a combination of the Manufacturer's Margin (1% for liquid or gaseous) and Unmeasured Losses.
J. Upon completion of all performance tests, all parties shall recognize limits of probable measurement error efficiency.
K. If local union rules require standby labor during these tests, it shall be furnished by the Buyer at no charge to Indeck.
L. Equipment must be in like-new condition at the time of the test. If equipment is not in like new condition, corrections and cleanings are to Buyer's account. Indeck shall be afforded reasonable access to perform preliminary testing with balance of plant available to support operation of the equipment over varying capacities.

III. Responsibility

A. The treatment of feedwater and the conditioning of boiler water are beyond the control of Indeck. Indeck shall not be responsible for damage due to the presence of oil, grease, scale, or deposits on the internal surfaces of the Equipment, or for damage resulting from foaming caused by chemical conditions of the water or for damage resulting from corrosion or caustic embrittlement.
B. Indeck is not responsible for corrosion, erosion, catalyst poisons or fouling due to corrosive agents or non-combustion residue (ash) in the fuels and flue gas entering the boiler or hot water generator or maintenance resulting from combustion of the fuel. Indeck is not responsible for catalyst plugging or clogging for any reason, or increased catalyst draft loss. The Buyer should exercise diligence in this regard, checking fuel analysis with supplier, investigating possibility of using helpful additives, and operating soot blowing equipment if required for the time periods as outlined in the maintenance manual or dictated by operation. Indeck shall not be responsible for damage resulting from conditions of heat transfer medium such as, deposits on internal and external surface, thermal shock, water hammer and explosion.
C. The Buyer and /or Owner shall provide, when applicable, all fluid and gaseous fuels clean and free from debris and foreign matter at point of connection to burner piping.
D. The Buyer and /or Owner shall provide a constant, uniform quantity of fuel flow, without segregation, to the firing equipment and with sizing and quality of solid fuel for all testing as outlined in this proposal.
E. Indeck or its representative will not be responsible for operation or maintenance of the equipment provided under this contract at any time including prior to or during acceptance testing.

GENERAL PERFORMANCE & TECHNICAL CONDITIONS

IV. Test Procedures for Solids in Steam and Water

A. There are two commonly accepted methods for the determination of solids in steam, which are:
   - Electrical conductivity method for dissolved solids.
   - Gravimetric method for total solids.

B. Because of the normally small difference in the total and dissolved solids and the complexity, time, and degree of skill involved in the gravimetric determination, it is usual to accept the electrical conductivity method of testing.

C. The electrical conductivity determination of dissolved solids in the condensed steam shall be made in accordance with ASTM D-1125-50T, Tentative Method on Electrical Conductivity of Water. Remove dissolved gases from the sample with any added material which will increase its conductivity. The conductivity shall be corrected to compensate for residual ammonia, carbon dioxide, or other gases remaining in the sample, and the dissolved solids shall be calculated from this corrected conductivity. For measuring performance by the electrical conductivity method, the average of ten determinations made at regular intervals throughout the test period shall be used. The sodium Flame Photometer (Gravimetric) method is recommended for measuring the maximum solids carryover in the steam.

D. The gravimetric determination of total solids in the condensed steam may be made in accordance with Method A of the latest edition of ASTM D-1069 entitled "Test for Suspended and Dissolved Solids in Industrial Waters" or a similar method embodying the essential principles of that specification. For measuring performance by the gravimetric method, the results shall be expressed as the average of three determinations made upon a composite sample which shall be taken throughout the entire test period.

V. General Performance

A. It is recognized that the performance of the equipment covered in this proposal cannot be exactly predicted for every possible operating condition. In consequence, any predicted performance data submitted are intended to show probable operating results which may be closely approximated but which cannot be guaranteed except as expressly stated in the performance guarantee, if made, clause or clauses in this proposal. Any performance curves submitted are for the Buyer's convenience and the performance indicated thereon is not offered by the Indeck, nor to be construed by the Buyer, as a proposal of contract obligation. Heating surfaces and tube thickness shown in the proposal are preliminary information and will be verified during contract execution.

B. The boiler saturated pressure parts are constructed in accordance with the requirements in A.S.M.E. Code, Section I for stationary boilers in effect at the date of the purchase order. A hydrostatic test of the saturated pressure parts will be performed at one and one half times the design pressure of the boiler per ASME Code requirements.

C. If the boiler proper is shop assembled, the flue gas side will receive our standard shop soap bubble test.

D. The latest edition of the following codes and standards shall be used for the subject offering: ABMA, AISC, AWS, ANSI B31.1, ASTM, SSPC, NEMA, UL, OSHA, NFPA, ISA. Please note applicable components shall be UL & FM approved; however, the system is not UL & FM approved.

E. Basis: wind ASCE 7-2010 90 MPH exposure C and I = 1.0, seismic ICC Building Code - 2009 Zone 2B and I = 1.0.

GENERAL PERFORMANCE & TECHNICAL CONDITIONS

ABMA TABLE 4 BOILER WATER LIMITS AND ESTIMATES OF CARRYOVER LIMITS THAT CAN BE ACHIEVED FOR STEAM BOILERS

CONDITIONS FOR WHICH FRACTIONAL CARRYOVER IS VALID					
Drum Pressure Psig	Maximum Boiler Water Solids ppm	Steam TDS Corresponding to Max. BW TDS ppm	Maximum Total Alkalinity ppm as $CaCO_3$	Maximum Suspended Solids ppm	Maximum FCO, Fractional Carryover *(Note 2)*
0 – 300	3500	1.0	*(Note 1)*	15	0.0003
301 – 450	3000	1.0	"	10	0.0003
451 – 600	2500	1.0	"	8	0.0004
601 – 750	1000	0.5	"	3	0.0005
751 – 900	750	0.5	"	2	0.0006
901 – 1000	625	0.5	"	1	0.0007
1001 – 1800	100	0.1*	Not Applicable*	1	0.001
1801 – 2350	50	0.1*	"	1	0.002
2351 – 2600	25	0.05*	"	1	0.002
2601 – 2900	15	0.05*	"	1	0.003

(Note 1) 20% of Actual Boiler Water Solids. For TDS ≤ 100 ppm, the total alkalinity is dictated by the boiler water treatment.

(Note 2) Does not include vaporous silica carryover

GENERAL PERFORMANCE & TECHNICAL CONDITIONS

Water Quality Limits

[Adapted From ASME 1979 Consensus]

Boiler Type: Industrial watertube, high duty, primary fuel fired, drum type steam boilers
Makeup Water Percentage: Up to 100% of feedwater
Conditions: Includes superheater, turbine drives, or process restriction on steam purity
Saturated Steam Purity Target [9]

Drum Operating Pressure[1] MPa (psig)	0-2.07 (0-300)	2.08-2.10 (301-450)	3.11-4.14 (451-600)	4.15-5.17 (601-750)	5.18-6.21 (751-900)	6.22-6.89 (901-1000)	6.90-10.34 (1001-1500)	10.35-13.79 (1501-2000)
Feedwater[7]								
Dissolved oxygen (mg/l O_2) Measured before oxygen Scavenger addition [8]	<0.04	<0.04	<0.007	0.007	<0.007	<0.007	<0.007	<0.007
Total iron (mg/l Fe)	≤0.100	≤0.050	≤0.030	≤0.025	≤0.020	≤0.020	≤0.010	≤0.010
Total copper (mg/l Cu)	≤0.050	≤0.025	<0.020	≤0.020	≤0.015	≤0.015	≤0.010	≤0.010
Total hardness (mg/l $CaCO_3$)	≤0.300	≤0.300	≤0.200	≤0.200	≤0.100	≤0.050	—Not detectable—	
pH range @ 25°c	7.5-10.0	7.5-10.0	7.5-10.0	7.5-10.0	7.5-10.0	8.5-9.5	9.0-9.6	9.0-9.6
Chemicals for preboiler System protection						Use only volatile alkaline materials		
Nonvolatile TOC (mg/l C)(6)	<1	<1	<0.5	<0.5	<0.5	——As low as possible, <0.2——		
Oily matter (mg/l)	<1	<1	<0.5	<0.5	<0.5	——As low as possible, <0.2——		
Boiler Water								
Silica (mg/l SiO_2)	≤150	≤90	≤40	≤30	≤20	≤8	≤2	≤1
Total alkalinity (mg/l $CaCO_3$)	<350[3]	<300[3]	<250[3]	<200[3]	<150[3]	<100[3]	—Not specified [4] —	
Free hydroxide alkalinity (mg/l $CaCO_3$)[2]	——Not specified——					——Not detectable [4]——		
Specific conductance (μmho/cm) @ 25°c without neutralization	<3500[5]	<3000[5]	2500[5]	<2000[5]	<1500[5]	<1000[5]	≤150	≤100

Notes for Table

1. With local heat fluxes >473.2 kW/m^2 (>150,000 But/hr/ft^2), use values for the next higher pressure range.
2. Minimal level of 0H- alkalinity in boilers below 6.21 MPa (900 psig) must be individually specified with regard to silica solubility and other components of internal treatment.
3. Maximum total alkalinity consistent with acceptable steam purity. If necessary, should override conductance as blowdown control parameter. If makeup is demineralized water at 4.14 MPa (600 psig) to 6.89 MPa (1000 psig), boiler walker alkalinity and conductance should be that in table for 6.90 to 10.34 MPa (1001 to 1500 psig) range.
4. Not detectable in these cases refers to free sodium or potassium hydroxide alkalinity. Some small variable amount of total alkalinity will be present and measurable with the assumed congruent or coordinated phosphate-pH control or volatile treatment employed at these high pressure ranges.
5. Maximum values often not achievable without exceeding suggested maximum total alkalinity values, especially in boilers below 6.21MPa (900 psig) with >20% makeup of water whose total alkalinity is >20% of TDS naturally or after pretreatment steam purity must be established for each case by careful steam purity measurements. Relationship between conductance and steam purity is affected by too many variables to allow its reduction to a simple list of tabulated valves.
6. Nonvolatile TOC is that organic carbon not intentionally added as part of the water treatment regime.
7. Boilers below 6.21 MPa (900 psig) with large furnaces, large steam release space and internal chelant, polymer, and/or antifoam treatment can sometimes tolerate higher levels of feedwater impurities that those in the table and still achieve adequate deposition control and steam purity. Removal of these impurities by external pretreatment is always a more positive solution. Alternatives must be evaluated as to practicality and economics in each individual case.
8. Values in table assume existence of deaerator.
9. No values given because steam purity achievable depends upon many variables, including boiler water total alkalinity and specific conductance as well as design of boiler, steam drum internals, and operating conditions (note 5). Since boilers in this category require a relatively high degree of steam purity, other operating parameters must be set as allow as necessary to achieve this high purity for protection of the superheaters and turbines and/or avoid process contamination.

GENERAL PERFORMANCE & TECHNICAL CONDITIONS

Indeck Required Water Quality Limits for Hot Water Generators *

Hardness as ppm CaCO3 (Note 1)	PH	Residual Sulphite as ppm Na2SO3	P-Alkalinity as ppm CaCO3 (Note 2)	M-Alkalinity as ppm CaCO3 (Note 3)	Chlorides ppm NaCl (Note 4)	Ammonia as ppm NH3 (Note 5)
<5	9.5 - 10.0	15 to 30	as req'd	100 to 400	<100	<7

Conductivity µS/cm at 25deg.C	Suspended Solids (ppm)	Oily and Greasy Matter (ppm)	Copper (ppm)	Iron (ppm)	Zinc (ppm)	Total Bacteria Count (cells/ml) (Note 6)
<2000	20 to 40	10 to 20	<0.02	<0.02	0	100 to 1000

* Limits represent reasonably achievable levels to limit water side corrosion and surface deposits. Indeck equipment warranty excludes claims resulting from corrosion and/or deposits. It is owner/operators responsibility in conjunction with a qualified water treatment specialist to maintain appropriate water chemistry in the unit at all times.

1. Initial system fill should utilize softened water with a hardness <2 ppm with sufficient TDS to buffer solution against PH change. To control oxygen concentrations in the circulating water a sodium sulfite solution (NaSO3) should be added as an oxygen scavenger until a residual of 30 ppm is maintained. As system is heated, additional sodium sulphite additions will be required due to its reaction with oxygen.

2. P-Alkalinity should be adjusted to maintain the PH within target range. Its concentration will normally be approximately 10% of the total alkalinity level.

3. This "total" alkalinity will reach equilibrium when the required PH is range is reached.

4. Excessive chloride ions are potentially corrosive and may indicate a malfunction of the softener system.

5. Ammonia is a byproduct of bacterial activity and any increase in this level may require the addition of a biocide to prevent fouling of the system.

6. Elimination of dead pockets, maintaining system PH at 9.0, and water temperature above 160 deg.F will inhibit bacterial growth.

6. SCHEDULE

6.1. DOCUMENTATION SCHEDULE

Indeck will prepare boiler performance calculations, system and component general arrangements, design drawings, flow diagrams and equipment specifications which will properly establish the system design and equipment supply. Indeck will provide informational drawings for the following items. This schedule is based on weeks after both the Buyer and Indeck signing off on a Full Notice to Proceed (FNTP) Purchase Order.

Item	Document Description	Weeks After FNTP
1	Foundation Load Drawing	6-8
2	General Arrangement Drawing	6-8
3	Piping and Instrumentation Diagram	6-8
4	Design Performance Summary Sheet	8-10
5	Trim List - Steam / Water	10
6	Burner Arrangement Drawings	12
7	Burner Fuel Piping Drawings	12
8	Wiring Schematic	18
9	Duct Drawing	18
10	Panel Layout Drawings	18
11	Trim List - Burner	20
12	BMS Sequence of Operation/Logic Diagram	20
13	Piping - Large Bore Arrangement Drawing	20
14	Control Panel Diagram / Block Diagram	22
15	Piping - Small Bore Arrangement Drawing	24
16	O&M Manuals (9 copies)	At Shipment
17	ASME Data Report	At Shipment

6.2. EQUIPMENT DELIVERY SCHEDULE

Indeck will begin work with a Full Notice-to-Proceed (FNTP) Purchase Order mutually accepted and signed by Buyer and Indeck and the initial deposit payment must be received by Indeck. If the full release to begin work is delayed beyond the stated FNTP date, the scheduled deliveries will be delayed. The delay shall be determined based upon the Indeck schedule at the time of release.

Engineering and delivery of the equipment will be scheduled to afford an efficient processing of the project. Indeck schedule is predicated on a "no holds" contract basis. Indeck will immediately start engineering and work to release orders for major work long lead items; tubing, headers, economizer, burner, and FD Fan once an acceptable Order is received by Indeck along with the initial deposit payment. This will limit Buyer's ability to make fundamental changes to major equipment being furnished. Indeck is willing to review these unknown comments on drawings which Indeck may receive at a later date and provide our comments related to our compliance; however, material changes to the information which impact design, material, and labor will be subject to a price and schedule adjustments to be determined at a later date. Factory Hydrostatic and Casing Pressure tests may elect to be witnessed by Buyer but are not considered hold points. Indeck will provide five (5) days advance notice to Buyer for the tests that would like to be witnessed.

Indeck requires an early delivery window for all of the equipment furnished. The delivery at the end point shall have an allowable early delivery window of three (3) to five (5) weeks before the stated delivery dates. The Buyer / site personnel are required to off-load the equipment and properly store the equipment at the Buyer's expense.

The schedule is subject to current project engineering workload, shop workload, shop shutdown/holiday schedules, and review at time of contract award.

Based on both the Buyer and Indeck signing off on a Full Notice to Proceed (FNTP) Purchase Order and Indeck receiving the initial deposit payment by the stated FNTP date below, the equipment will be ready to ship from the point of manufacture as follows:

Equipment	Ship Date – Unit #1	Ship Date – Unit #2	Ship Date – Unit #3
Full Notice to Proceed	TBD	TBD	TBD
Boiler	TBD	TBD	TBD

NOTE: Indeck currently has on order manufacturing for one (1) 50,000,000 BTU/hr standard design HTHW Generator intended for our Rental Department fleet. At this time, this unit is scheduled for completion in October, 2011 and is available for rent/sale on a first come, first serve basis. This unit may be adapted to meet the specification requirements as clarified in this proposal. Price and the schedule adjustments are available should there be interest in accelerating the schedule.

7. TECHNICAL COMMENTS, CLARIFICATIONS AND EXCEPTIONS

The following comments, clarifications and exceptions form a part of Indeck's proposal. Indeck requests an opportunity to discuss these in more detail during your evaluation of this offer. Additional comments may follow. If a purchase order is released, these comments shall supersede the request for quote specifications.

Request for Quotation – Division 15 Section 15560 pages 1-31:

1.01.A - Indeck clarifies that the warranties are as specified in this proposal.
1.01.B -"The manufacturer shall furnish all materials and equipment..." This paragraph is unclear in its meaning. Indeck clarifies that the equipment and services provided are as described in this proposal.
1.01.D - Indeck clarifies that services to "Relocate one (1) ... HTHW Generator is not included in this proposal. Additionally, the warranties from this proposal are limited to the equipment specified in this proposal and does not include additional warranties for a 'relocated' boiler system.
1.03.B - Indeck clarifies that, as referenced in NFPA 85, burner valve trains and piping are designed in accordance with NFPA 54 and NFPA 31, not ANSI B31.1 code and not ASME B31.1 code.
2.02.A.6 - Indeck clarifies that 'readily installed appurtenances' also include FGR Ducts, Gas Ducts, Air Ducts, Dampers, actuators, gauges, thermocouples, transmitters, and flow meter...etc. These items are to be listed as 'Shipped Separately' and will be further defined in the Engineering Submittals. A sample P&ID is included with this proposal for consideration of the 'shipped loose items'.
2.02.B.1 and 2 - Indeck clarifies that proprietary calculations will not be made available.
2.02.B.3 - Submit letter from instrumentation supplier that combustion controls are compatible and matched with burner and generator for proper operation. Indeck clarifies that Factory Acceptance Testing is welcome to the Buyer and is provided for controls simulations as described in this proposal. A letter from each instrumentation supplier is unreasonable.
2.02.B.4- Indeck clarifies that a letter from burner manufacturer stating that burners are able to fire natural gas and No. 2 Oil at emission rates that are lower than the regulated emission limits is unnecessary as the Engineering Design Datasheets are submitted to Buyer for approval prior to manufacturing release.
2.03.D – Indeck clarifies that Emissions are as limited to those described in Section 4 of this proposal.
2.03.H - Maximum Water Pressure Drop. Indeck clarifies that economizer and generator allowable pressure drop does not include pressure drop incurred by the water flow meter.
2.03.H SO2 Emission Requirements – Indeck takes exception to this requirement as there is a discrepancy in the SOX emissions and the Sulfur content in the fuel. Indeck's proposal is based on #2 oil as having 0.05% wt Sulfur. The specification has SOX emissions based on fuel having 0.2% Sulfur! The specified sulfur is 4 times higher than that assumed by the Indeck for the emission performance.
2.03.J.3.(e) - Indeck clarifies that when operating at 30% FGR, burner draft loss at 100% load is expected to be approximately 8.5 in wg on gas and oil firing.
2.03.J.5.(c) – Indeck clarifies that equipment will be shop assembled to the maximum extent possible with burner mounted in the windbox and valve trains mounted and wired on the windbox. Any breakdown required for installation is not included in this offering, and shall be provided by others (contractor). Shipped loose items will be denoted on final Engineering Submittals.
2.03.J.5.(e)(1) – Indeck clarifies that the oil gun mixes fuel oil and compressed air in the oil nozzle. Compressed air provided by others.
2.03.J.5.(e)(3) – Indeck clarifies that one (1) warehouse spare oil gun is offered as part of spare parts of this proposal.
2.03.K.1.f – Indeck clarifies that no air pre-heater or option for an air pre-heater is offered. The proposed design does not require an air pre-heater for the HTHW Generator system to operate. Furthermore, no heat source has been identified in the specification. If an air preheater is determined to be needed by the Buyer, additional information will be required in order to define the design requirements before equipment can be offered. Price and delivery will be affected.
2.03.M.2 – Indeck clarifies that pipe stress analysis information is included on the Engineering Submittals for Buyer approval prior to fabrication.
2.10.A 5 – Indeck clarifies that it will not maintain each piece of equipment for a five or one year period.
3.02.D – Indeck clarifies that the fan performance for this product has been previously tested. Fan curve, efficiency, power usage shall be provided on the fan vendor performance curve and provided with Engineering Submittals. Specific performance testing for the fans manufactured for this project is not included.
3.04 – Indeck clarifies that all required final inspection and testing of equipment is provided by others as Third Party Testing for performance and emissions are not in the Manufacturer's Scope.
3.05 – Indeck clarifies that the field performance testing is as described in this proposal. Time required beyond that proposed will be billed per the attached Field Service Rate Sheets at per diem rates.
3.06 – Indeck clarifies that the training is as described in this proposal. Time required beyond that proposed will be billed per the attached Field Service Rate Sheets at per diem rates.
3.09 – Indeck clarifies that Manufacturer's Field Services are included as described in this proposal. Time required beyond that proposed will be billed per the attached Field Service Rate Sheets at per diem rates.
3.10 - Indeck clarifies that the standard manufacturer's warranty applies to all items except for those described in the Indeck Power Equipment Company 5-Year Limited Pressure Vessel Special Warranty as described in this proposal. Furthermore, start date of the warranty is open and ambiguous. Indeck clarifies that the start date for the warranty is upon successful performance testing, not to exceed 4 months from date of shipment, whichever first occurs.

8. FREIGHT

The equipment will be shipped per Incoterms 2000 CIF – Newark Liberty International Airport, Newark, NJ. Freight expenses are included in the proposed pricing.

Truck Shipments

Truck shipment of the boiler equipment is subject to route survey and permit approval, and changes in routing required by State and Provincial Transportation Agencies. All of the foregoing may require a price and schedule adjustment.

Off loading of the components is the responsibility of the Buyer, two (2) hours of free time for unloading has been provided. Additional time is subject to demurrage and truck rental fee.

General

Indeck reserves the right to select a carrier of our choice. This offer is subject to verification of rail / truck / waterway clearances based on the actual site location. All other shipments will be via un-escorted trucks. The boiler size and shipping clearances will dictate what accessories will be shipped mounted on the unit. Freight pricing is based on current value for the following items and are subject to change based on market price at the time of shipment: prevailing tariffs, duties, fuel costs. Any non-normal routing and extra escorts which result in special costs associated with a road closure, road bans, bridge closure, bridge bans, waterway closure, waterway bans, construction, electrical / phone/ etc line moves, road / train / etc sign moves or permit rejection are subject to a price adjustment. Any utilities, wire lifting, or police escorts if required, will be billed as per outlay. Suitable ground conditions on site and in all work areas are the responsibility of others. If additional towing or pushing of transportation equipment is required because of site conditions, any costs incurred will be a price adjustment. Any damages incurred to property or equipment (including transportation equipment) as a result of towing or pushing will be a price adjustment. Cargo insurance is not included, but is available upon request. Any charges arising from customs inspections or other delays beyond the control of freight forwarder will be a price adjustment. For water transportation to the site, the move from the Port of Import to the site is not included. Indeck requires the equipment to be shipped below deck for ocean moves so sea salt does not touch the equipment

9. PRICING

9.1. BASE OFFER

Your net price for the above described boiler is defined on the attached Price Summary form. Pricing is valid for 30 days.

9.2. OPTIONAL OFFERS

The optional offers are as defined in the attached Price Summary form. Pricing is valid for 30 days

9.3. PAYMENT TERMS

The Indeck payment terms are defined in the attached Terms and Conditions of Sale and as listed below:

15% At confirmation of order. Net 0

25% Upon order placement for major material (headers and boiler tubes). Net 0

15% Upon receipt of major materials as defined above. Net 0

20% Upon completion of bending half the boiler tubes. Net 0

15% Upon successful boiler shop hydro test. Net 0

10% After shipment or offer to ship. Net 30

PRICING SUMMARY

The Port Authority of NY & NJ
Newark Liberty International Airport
INDECK PROPOSAL QU00021522 Revision 0
6/10/2011

-----	Description of Base Offer	Pricing	Accepted Rejected Option	Basis of Contract Value USA $	Rev.
-----	BASE OFFER - Indeck will design and manufacture three (3) International LaMont HTHW Generator systems, each to produce 50,000,000 BTU/hr. Systems as are defined in the Indeck proposal QU00021522 dated June 06, 2011. Price includes Field Site Services and equipment delivery based on Inco Terms 2000 - CIF-Newark International Airport, Newark, NJ. 07114	$2,989,117	Accepted	$2,989,117	0

Option Number	Description of Options	Optional Pricing	Accepted Rejected Option	Basis of Contract Value USA $	Rev.
1	Indeck Power Equipment Company 5-Year Limited Pressure Vessel Special Warranty as described in the Indeck Proposal QU00021522 pages 50-51, dated 06/06/2011.	$341,556	Accepted	$341,556	0
			Optional	$0	0
			Optional	$0	0
			Optional	$0	0
			Optional	$0	0
			Optional	$0	0
			Optional	$0	0
			Optional	$0	0
			Optional	$0	0
			Optional	$0	0
			Optional	$0	0
	TOTAL OF BASE PRICE WITH SELECTED OPTIONS			$3,330,673	

NOTES	
1. The prices listed above are valid per the Sole Source Agreement Letter.	0
2. The prices listed above exclude all sales, use, excise or similar taxes.	
3. The options listed above are not included in the Base Offer.	
4. The options listed above must be selected by the FNTP date.	
5. The prices above are quoted in USA dollars.	

10. GENERAL AND COMMERCIAL

10.1. GENERAL

After the equipment has been properly installed and is ready for operation, we do require that an Indeck Service Technician supervise the initial start-up by your operators and train your operating personnel. Please see attached our Field Service Rate Sheets. At sometime during the start-up, the burner manufacturer may be required on site for adjusting the burner. This would be billed at cost plus 15% handling charge.

Users are responsible for:

A. Returning defective part(s) within 30 days of shipment of warranty part(s).
B. Indeck requires that ABMA guidelines are maintained within the steam drum of our boilers.
C. Proper care and maintenance of the equipment.
D. Providing competent operators.

This quotation is based upon Indeck's standard "General Conditions of Sale" (available upon request). Indeck will negotiate commercial terms and conditions in good faith with Buyer to form a mutually beneficial contract. In addition, please note that the price does include shipping charges to job site but does not include any taxes, duties, permits, fees, export documentation or preparation, etc. which may be applicable. This proposal is subject to management review and shop loading at the time of the purchase order. Oversea jobsites have parts only warranties with field labor and freight is not included. Shop inspections do not include radiography, magnetic particle inspection and hardness tests.

The technical constructability information contained in this proposal and any supporting documents from Indeck is provided solely for informational purposes only. Indeck makes no further guarantees, warranties, or representations beyond those contained in this proposal about the accuracy of this constructability information provided including, but not limited to, information relating to equipment design, weights, quantities, and sizes. By using this information, Buyer agrees to and accepts this disclaimer.

All documents, attachments, and/or information submitted herein is the intellectual and confidential property of Indeck and, as such, it is to be held in strict confidence and is not to be forwarded to other parties, be used to compete against Indeck, or be reproduced in any form without the expressed written permission of Indeck. Use of this information shall in no way alter or expand Indeck's liability. Recipient shall return to Indeck all documents, attachments, and /or information upon demand. This submittal, including any attachments, is intended solely for the addressees and for the purposes described herein. All rights with respect to privileged, intellectual, and/or confidential information and in all events are reserved. The obligations under this paragraph shall survive the expiration or termination of any agreement and shall extend to and be binding upon the respective successors and assigns of the parties hereto. Persons receiving this submittal by mistake should return it to the sender and destroy any copies.

10.2. GENERAL CONDITIONS OF SALE

1. CONTRACT AND ACCEPTANCE - The terms and conditions of sale set forth herein, and all drawings, specifications, descriptions, and other documents attached hereto and incorporated herein by reference constitute the entire agreement between **INDECK** (SELLER) and _____ ("Buyer"). **SELLER'S ACCEPTANCE OF THIS ORDER IS EXPRESSLY CONDITIONED BY BUYER'S ASSENT TO THE TERMS CONTAINED HEREIN**. The terms and conditions of Seller's proposal (if any) and acknowledgment shall prevail over any conflicting or different terms in Buyer's order unless Buyer notifies Seller in writing of its objections thereto within seven (7) days from receipt of Seller's acknowledgment. The failure of Seller to object to any provision in conflict herewith whether contained on Buyer's purchase order or otherwise, shall not be construed as a waiver of the provisions hereof nor as an acceptance thereof. Seller's proposal is only preliminary unless it is otherwise confirmed. If any of the terms and conditions of Seller's proposal conflict with these general conditions of sale, those contained in the proposal shall prevail.

2. PRICES AND PAYMENT.

   a. Prices set forth in this Agreement will not include crating costs, and delivery of the Product will be Ex Works (as defined in INCOTERMS 2000). Crating costs will be charged to Buyer without markup and such crating will not be returnable or refundable. Unless otherwise agreed by Buyer and Seller in writing, payment will be payable in cash at Seller's place of business without any deductions and in accordance with the Payment Terms section of this Agreement.

   b. Seller reserves the right to change the terms of payment if, in Seller's sole judgment, the financial condition of Buyer has changed prior to or at the time of any shipment.

   c. If final completion of the Product or shipment of the completed Product is delayed due to Buyer's failure to (i) promptly inspect such Product, (ii) give shipping instructions or (iii) discharge any duty necessary for delivery, payment will become due as if shipment had been made. In any such case, Buyer will pay reasonable storage charges in addition to the purchase price. Risk of loss during storage will be borne by Buyer.

   d. Payments due will accrue interest from the date that a payment is due at a rate that is the lesser of (i) 1.5% per month or (ii) the maximum interest rate permitted by law. If a dispute arises between Buyer and Seller, no deduction will be made from any payment owed by Buyer without Seller's written acceptance of the same. If such dispute concerns an amount payable by Buyer, then Buyer will be permitted to withhold only the disputed amount and will pay all other amounts as they become due.

   e. If termination of this Agreement (following acceptance of the Purchase Order (pursuant to the Acknowledgement)) is agreed upon by Buyer and Seller in writing, full payment by Buyer will be due on the date of termination and only with deduction of the Product, or parts thereof, which has not yet been purchased and produced.

3. SHIPPING SCHEDULE AND DELIVERY - Seller will establish shipping schedules as closely as practicable to Buyer's requested delivery date. However, Seller will not be responsible for deviations in meeting shipping schedules nor for any losses or damages to Buyer (or any third person) occasioned by deviations in the performance or the non-performance of any Seller's obligations under this contract or by loss of or damage to the product when caused directly or indirectly by or in any manner arising from any force majure event such as, but not limited to, fires, floods, thefts, accidents, embargoes, war or other outbreak of hostilities, acts of government, acts of God, acts of the public enemy, unusually severe weather, delay of carriers or suppliers, governmental acts or regulations, casualty, riots, acts of Buyer, strikes or other labor difficulties, shortages of labor, supplies, and transportation facilities or any other similar or different cause or causes beyond its control or the control of its suppliers or subcontractors. In the event of any such delay, (1) the time for performance shall be reasonably extended including any additional recovery time for design, manufacture, and shipment, (2) Seller and Buyer shall take reasonable steps to re-establish the time table set out in the Contract, (3) an adjustment shall be made for additional costs to Seller. If the cause results in Contract termination, Buyer shall reimburse Seller for its costs plus Contract profit for all work performed. Seller reserves the right to ship in advance of any Buyer request dates, except those dates stipulated, not before. Seller reserves the right to make delivery in lots. Upon delivery of each product lot, Seller shall have the right to immediately invoice an appropriate portion of the total purchase price. Should shipment be held beyond scheduled date for the convenience of Buyer, the Seller reserves the right to bill immediately for the goods and to charge Buyer for warehousing insurance, trucking charges and all other expenses incident to such delay.

4. CLAIMS FOR SHIPMENT OR SHORTAGES - Any claim for loss, breakage, or any other damage (obvious or concealed) resulting or arising from the shipment of the products are Buyer's responsibility and should be made to the carrier. Seller will render Buyer reasonable assistance in securing satisfactory adjustment of such claims. Any notices of shortages or other errors must be made in writing to Seller within 15 days after receipt of shipment. Failure to give such notice shall constitute unqualified acceptance and a waiver of all claims by Buyer.

5. TRANSPORTATION CHARGES AND ALLOWANCES - No freight is allowed unless stated in Seller's proposal (if any). If Seller's proposal stated that freight (if any) is allowed, all prices are F.O.B. Seller's shipping point with most economical surface transportation allowed. If the quoted price includes transportation, Seller reserves the right to designate the common carrier and to ship in the manner it deems most economical. Added costs due to special routing requested by the Buyer are chargeable to the Buyer. Under no circumstances is any freight allowance which is absorbed by the Seller to be deducted from the selling price. If the quoted price includes transportation, no reduction will be made in lieu thereof whether Buyer accepts shipment at factory, warehouse, freight station, or otherwise supplies its own transportation. Seller does not warrant that clearance is available to ship the product by any specific mode of transportation. Seller shall, under no circumstances, be responsible for performance hereunder if any delays are the result of a force majure event which is beyond the reasonable control of Seller.

6. RISK OF LOSS AND TITLE – Unless otherwise agreed to in writing by Seller, regardless of who pays shipping costs or arranges for shipment, delivery of the product will be F.O.B. factory or Seller's facility with all title, ownership, and risk of loss or damages will completely transfer to Buyer upon Seller making the product available for shipment F.O.B. Seller's factory, plant, or other point of shipment, or upon transfer to a transport carrier.

7. TAXES - All applicable international, federal, state, and local taxes including fees, duties, or other charges are for Buyer's account and are in addition to the prices quoted by Seller in its proposal. Seller's prices do not include any applicable sales, excise or similar taxes and duty. If under law or governmental regulation now or hereafter in effect, the Seller is required to pay or collect any tax, fees, duties, or other charges upon products included in this order or predicated upon, measured by or arising from the sale, transportation, delivery, use or consumption of said products whether directly or indirectly, the price to be paid by the Buyer hereunder shall be increased by the amount of any such tax. Buyer agrees to pay such tax as part of the purchase price.

8. PRODUCT - The Seller agrees to supply the Buyer with equipment and components from Seller's standard product unless otherwise mutually agreed upon by Buyer and Seller. Upon request of Buyer, Seller shall reasonably cooperate with Buyer with respect to Buyer's responsibility for compliance with specified federal, state or local laws or requirements of authorities and other state and federal requirements; however, Buyer shall be solely responsible for such compliance, and Seller will incur no liability on account of any failure of Buyer to comply with any such laws or requirements. Buyer hereby agrees to indemnify, defend and hold harmless Seller from any costs, damages, fines and expenses (including, but not limited to, reasonable attorneys' fees) incurred by Seller resulting from Buyer's failure to comply with such laws and requirements. Any application or permit required for erection, installation, or operation of the products shall be the sole responsibility of the Buyer and shall be obtained by the Buyer. Any alteration or modification necessary to the building/foundation upon which Seller's products are erected and any liability arising therefrom will be the sole responsibility of the Buyer.

   Supporting steel furnished by Seller shall be designed to support the product proposed to be furnished by Seller and shall be designed in accordance with the latest Rules of the American Institute of Steel Construction. If Seller is required to increase the size or weight of its supporting structures to conform to additional rules or additional loadings imposed by Buyer, Buyer shall reimburse Seller for the additional steel required.

   Seller shall provide Buyer with drawings showing the foundation loading due to the product and the required anchor bolt location. Seller is not responsible for excavation, grouting, concrete work, depth of footings, size or adequacy of the foundations. Seller bears no responsibility for damage caused by settlement of the foundation.

9. INSTALLATION - If Seller has agreed to install the product, Seller warrants that such installation will be performed in a workmanlike manner. Buyer shall pay all costs of installation, including the cost of any modifications to Buyer's plant and product which

are necessary to accommodate Seller's product. Seller specifically does not warrant that such modifications will not be necessary.

10. MATERIAL AND WORKMANSHIP WARRANTY –

Sole Express Warranty - The Seller warrants that the products sold hereunder conform to any applicable drawings and specifications delivered by Seller and accepted in writing by Buyer and will be free from defects in material and workmanship which became apparent under normal use, and of which Buyer gives written notice to Seller within a period of 12 months from the date of the scheduled first fire or flue gas in the boiler or 18 months from the date of shipment or offer to ship, whichever period expires first. Refractory or insulation furnished by Seller is warranted for ninety (90) days from the date of initial first fire or flue gas in the boiler or 12 months from date of shipment or offer to ship, whichever happens first, and excludes faulty installation by others. Any express or implied reference to plans and specifications outside of the specific scope of the product furnished or repaired hereunder shall not in any way alter or enlarge Seller's responsibility under the contract. Product or services supplied by other vendors are excluded from Seller's warranty and only carry such warranty as provided by those vendors. Seller agrees to act as liaison for Buyer with those vendors.

Exclusive Remedy - Should a defect in material provided by Seller be found at first fire or flue gas in the boiler while the Seller Service Technician is on site, Seller will pay for the removal of the old part, installation of the new or repaired part, labor and freight (excluding any modifications required to access Seller's part which was not provided by Seller to Seller). Should the Buyer not use an Seller Service Technician or after first fire or flue gas by an Seller Service Technician within that period, the Seller receives from Buyer written notice within ten (10) days of Buyer's discovery of any alleged defect in or non-conformance of any product and if, in Seller's sole judgment, the product does not conform or is found to be defective in material or workmanship, then Buyer shall, at Seller's request, return the part or product F.O.B. Seller's shipping point and Seller, at Seller's option and expenses, shall repair or replace the defective part or product or repay the Buyer the full price paid for such part or product by Buyer. Dismounting of defective or non-conforming parts and reinstallation of repaired or replaced parts is done at Buyer's expense. Warranty for delivery of spare parts or replacement of non-conforming parts expires when warranty established at sale for original product expires and does not alter or extend limits on liability. If Seller fails to so repair or replace, Seller's liability shall not exceed the contract price of the specific defective goods. Buyer and Seller agree there is no failure of essential purpose of this warranty so long as Seller is willing and able to repair and replace defective goods. Any repayment of purchase price shall be without interest. Seller's sole responsibility, and Buyer's exclusive remedy hereunder shall be limited to such repair, replacement, or repayment of the purchase price as above provided. The foregoing warranty is in lieu of all tort liability and all other warranties, representations, or rights of rejections, express or implied.

NO IMPLIED WARRANTIES - **THERE ARE NO OTHER WARRANTIES, EXPRESSED, STATUTORY OR IMPLIED, INCLUDING OF MERCHANTABILITY, QUALITY OR FITNESS FOR PURPOSE, NOR ANY AFFIRMATION OF FACT OR REPRESENTATION WHICH EXTENDS BEYOND THE DESCRIPTION OF THE FACE HEREOF.**

Conditions of Warranty and Exclusions – Seller's warranty is contingent upon proper operation and maintenance by Buyer. The warranties of Seller do not cover and Seller makes no warranty with respect to: (a) failures not reported to Seller within ten (10) days of Buyer's discovery of when failure occurs during the warranty period specified above; (b) failure to give Seller prompt and reasonable opportunity to inspect the product; (c) normal wear and tear or other results of product operation including, but not limited to, damage resulting from the improper management of chemicals, treatment of feedwater and/or the conditioning of boiler water, such as damage due to the presence of oil, grease, scale or deposits, damage resulting from foaming caused by chemical conditions of the water, or damage resulting from water side, steam side, or flue gas side corrosion or erosion, or caustic embrittlement, or failure or damage due to misapplication, abuse, improper installation or abnormal conditions of temperature, dirt, erosion, or corrosive matter, fouling, any chemical elements that reduce or eliminate the effectiveness of a catalyst when an SCR/CO system is included or other factors which may be due to corrosive agents, combustible residues, ash, or other constituents of the fuel, damage to paint or painted surfaces, or the workmanship, materials, or adequacy of the foundation; (d) failure to keep adequate logs and records to establish proper product operation; (e) failures due to operation, either intentional or otherwise, above rated capacities or in an otherwise improper manner; (f) products which have been in any way tampered with or altered by anyone other than an authorized representative of Seller (g) products damaged in shipment or otherwise without fault of Seller; (h) expenses incurred by Buyer in an attempt to repair or rework any alleged defective product; and (i) defects in material and workmanship which are attributable to drawings and specifications provided by Buyer. Failure to properly operate this product voids this warranty. Buyer bears responsibility for verifying the fuel analysis, utilizing fuel additives where necessary and properly operating soot blowing product.

Backcharges – The parties agree that Buyer's remedies for warranty claims are set forth above and that Buyer will not be permitted to backcharge Seller in connection with any such claim.

F. Subvendor Repair Warranty - Product manufactured by others but repaired by Seller is subject to Seller's warranty and limitations set forth herein and the warranties and limitations of the subvendors and such product is limited by design factors beyond the control of Seller.

G. *Cost of Removal for Access* – The cost of removal or replacement of product furnished by parties other than Seller to provide access to the defect will be to the Buyer's account.

H. *Servicing Warranty Claims* – During the warranty period set forth herein, Seller shall repair or replace within a reasonable time of inspecting the product and reviewing necessary operational or test data in order to determine that a defect exists. Seller shall be fully compensated for the expenses and travel and job time (at the then prevailing per diem rates) of its service representatives who inspect non-warranty claims. Seller shall also be compensated for the time and expenses of its service representatives who travel to a jobsite and are denied necessary access to the product for any reason or are delayed at the jobsite while waiting for product availability.

11. PERFOMANCE GUARANTEE AND TESTING

A. Successful performance tests satisfy Seller's Contract obligation regarding product operation. Performance tests shall be run as soon as possible after initial scheduled

start-up (defined as first fire or flue gas in the boiler), not to exceed thirty (30) days. If the performance test is not completed within thirty (30) days after notice of initial scheduled start-up of the boiler, then the performance test shall be deemed satisfactorily performed for any and all purposes. Said tests shall be made in accordance with Seller's Operating and Maintenance Manual, Seller's General Performance & Technical Conditions in Seller's proposal, and with the applicable test procedures of the latest edition of ASME Power Test Code for stationary steam generating units. The tests shall be conducted at the Contract specification load or, if Buyer can not conduct at the specification load, then at any lesser load as agreed upon by Buyer and Seller. Once the product has achieved performance requirements at the Contract specification load or the agreed lesser load, all Contract specifications and guarantees regarding performance of the product are satisfied. Upon satisfactory completion of performance tests, Seller's responsibility shall be limited to the material and workmanship warranty established under this Contract.

B. All labor costs including, but not limited to, stand-by labor required by local unions and material costs associated with initial scheduled start-up and satisfactory completion of performance tests, shall be for Buyer's account and shall be in addition to the Contract price. Any overtime during initial scheduled start-up and/or performance testing shall be for Buyer's account.

12. PATENT INDEMNITY - Seller agrees that it will indemnify Buyer for all damages or costs resulting from any suit or demand alleging infringement of any patent relating to the structure of the apparatus or any part thereof furnished by Seller hereunder, if Seller is notified promptly in writing of such suit or demand and given adequate authority, information and assistance for the defense of same. Seller shall have no obligation to assume defense of any such claim, but in the event that it does exercise such right, Seller at its own option and expenses shall have the right to settle such suit or demand by procuring for the Buyer the right to continue using the apparatus or part thereof furnished by Seller. Alternatively, Seller may, at its expense, replace the apparatus or part thereof with non-infringing apparatus, or may modify same so that it becomes non-infringing, or may remove the alleged infringing apparatus and refund the purchase price. On any apparatus or part thereof made to the buyer's design or the design of which has been modified by the Buyer, this indemnification clause shall not apply. Seller's sole responsibility and the Buyer's exclusive remedy for any such suit or demand shall be set forth in this paragraph, and in no event shall Seller's liability under this paragraph exceed the purchase price paid by the Buyer for the products.

13. SELLER'S RIGHT TO MANUFACTURE - Seller in its sole discretion shall have the right to manufacture the products provided hereunder as far in advance of its estimated shipping schedule as it seems appropriate.

14. LIMITATION ON LIABILITY - Seller's sole responsibility and Buyer's sole and exclusive remedy with respect to any breach of warranty or guarantee under this agreement shall be limited to repair, replacement or repayment of the purchase price at Seller's sole option. Seller's total responsibility and liability for any and all claims, damages of any nature, losses, liabilities or costs of corrective efforts, including but not limited to those relating to any warranty or guarantee arising out of or related to performance of this agreement or the products covered hereunder or the performance

thereof shall not exceed the purchase price. In no event shall Seller be liable for any special, indirect, incidental or consequential damages of any character; including but not limited to, loss of use of productive facilities or product, lost profits, property damage, expenses incurred in reliance on Seller's performance hereunder, or lost production, whether suffered by Buyer or any third party. Seller disclaims all liability for any and all cost, claims, demands, charges, expenses or other damages, either direct or indirect, incident to all property damages arising out of any cause of action based on strict liability. Seller's limit of liability associated with the performance and emission guarantees shall be limited to ten (10) percent of the contract price.

15. INDEMNITY - Buyer hereby agrees to defend, indemnify and hold harmless Seller, its employees, officers, agents, affiliates, and representatives for or from any damage to property of Buyer or third parties or injury to or deaths of persons including without limitation employees, officers, agents, or representatives of Buyer or Seller and third parties and for any and all claims, costs, expenses (including attorneys' and experts' fees) suits, demands, damages, and liabilities while engaged in activities relating to this Agreement or arising out of Buyers' ownership or use of the product.

16. MODIFICATION, RESCISSION AND WAIVER - This contract may not be modified or rescinded nor any of its provisions waived unless such modifications, rescission or waiver is in writing and signed by an authorized employee of Seller at its office.

17. SECURITY INTEREST - In order to secure the obligations of Buyer under this Purchase Order ("Obligations"), Buyer hereby grants to Seller a security interest in the items set forth on this Purchase Order (hereinafter is referred to collectively as the "Collateral") and being shipped to the Buyer hereunder. Buyer shall maintain the Collateral in such condition and repair and not permit its value to be impaired, in all events consistent with Buyer's past practices in the ordinary course of its business until the Obligations are repaid. The security interest of Seller in the Collateral shall be superior and prior to all other liens as a purchase money security interest, and Buyer shall not, incur, assume or suffer to exist any lien upon any of the Collateral other than the lien hereby granted. Buyer shall pay all expenses and, upon request, execute and deliver any commercially reasonable documents and take any further actions not inconsistent with the terms of this Purchase Order reasonably deemed advisable by Seller to establish, determine priority of, perfect, continue perfected, or terminate the security interests granted to Seller under this Purchase Order. Buyer authorizes Seller to prepare and file financing statements or fixture filings describing the Collateral in such jurisdictions as Seller deems appropriate. If Buyer fails to remit payment pursuant to the terms of this Purchase Order or any related documents, Seller may enter into premises where any Collateral may be located, and may take possession of Collateral, all without notice or hearing, provided that such entry into the premises is accomplished in a lawful manner. Seller may also require Buyer to assemble the Collateral and to make it available to Seller at any convenient place designated by Seller. It is agreed that Seller will not have an adequate remedy at law if this obligation is breached, and accordingly that Buyer's obligation to assemble Collateral shall be specifically enforceable. Seller may sell the Collateral removed from Buyer's premises or collected from such Buyer pursuant to the laws of the State of Illinois. Seller shall release any liens upon the Collateral upon repayment in full of the Obligations.

18. CANCELLATION – This order is non-cancelable.

19. COSTS AND EXPENSES - Buyer agrees to pay Seller all costs and expenses, including reasonable attorney's fees (including those on appeal) incurred by Seller in exercising any of its rights and remedies, hereunder, including specifically the collection of any outstanding balance owed to Seller by Buyer.

20. MISCELLANEOUS - Seller reserves the right to furnish substitutes for materials which cannot be reasonably obtained because of any restrictions, voluntarily or compulsorily established by or in connection with any governmental authority or program. Seller may during any periods of shortage due to causes beyond the control of Seller or its suppliers, prorate its supply of products among all of its Buyers in such manner as may be deemed equitable in the sole judgment of Seller.

Seller shall not incur any liability to Buyer because of any pro-ration hereunder.

All orders must be accepted by an authorized employee of Seller at its office.

The rights and duties of the parties and construction and effect of all provisions hereof shall be governed by and construed according to the law of the Illinois, except as otherwise provided herein. Any legal action relating to, arising from or brought to interpret these terms and conditions of sale, must be initiated in a federal or state court of competent jurisdiction for Cook County, Illinois.

Failure of Seller to insist in any one or more instances upon the performance of any of the terms and conditions of this contract or the failure of Seller to exercise any of its rights hereunder shall not be construed as a waiver of relinquishment of any such term, conditions, or right thereunder, and shall not affect Seller's right to insist upon strict performance and compliance with regard to any unexecuted portions of this contract or future performance of these terms and conditions.

21. LIMITED LIABILITY OF SELLER FOR FIELD WORK

A. At all times during which Seller's agents, laborers, engineers, or service technicians (representatives) perform service at the job site, including, but not limited to, installation, start-up first fire or flue gas in the boiler, testing, or product repairs, Buyer shall provide a supervisor to whom the representatives shall report. Such supervisor shall direct the work of the representatives and shall be responsible for the operation of all product and appurtenances in the work area for the safety of all persons, and for the protection of property in the work area. No representative of Seller may operate the product.

B. In the event Seller field erects the product utilizing its own field labor, Seller shall provide a supervisor to direct only the work of Seller's erection personnel. This supervisor shall report to and be directed by Buyer's project engineer, or comparable individual, at the job site.

22. RESPONSIBILITY OF BUYER FOR OPERATION OF EQUIPMENTS - With respect to all product operation, including, but not limited to, preliminary operations,

demonstrations of capacity, and performance testing, Seller's representatives are authorized only to advise and consult with Buyer or its representatives and no representative of Seller is licensed to operate the product.

23. COMPLIANCE AT THE JOB SITE – Seller does not warrant that the product complies with laws, ordinances, regulations or insurance requirements in effect at the job site. Modifications to the product which are required in order to comply with the same are at Buyer's expense. Seller accepts no responsibility for penalties or citations levied against Buyer by local, state, or federal authorities.

24. CONFIDENTIAL INFORMATION OF SELLER - All documents, information, intellectual property, or proprietary information received from Seller (including, but not limited to proposals, samples, designs, concepts and drawings), herein defined as Confidential Information, remains the intellectual and confidential property of Seller. Buyer shall maintain as secret and treat as confidential all Confidential Information supplied by Seller. Buyer may not use any Confidential Information received from Seller in performing other work for itself or any third party at any time and Seller's Confidential Information may not be used by Buyer to compete against Seller or be disclosed or reproduced in any form to a third party without Seller's expressed written prior consent. Use of this Confidential Information shall in no way alter or expand Seller's liability. Confidential Information shall not include that which is previously known by Buyer, public information, or information received from a third party under no obligation to Seller to hold the information as confidential. Buyer shall return to Seller all Confidential Information upon demand and in no event later than the completion of the work under the Contract. Drawings supplied to Buyer for maintenance and installation purposes need not be returned to Seller at Contract completion. All rights with respect to privileged, intellectual, and/or Confidential Information and in all events are reserved by Seller. The obligations under this paragraph shall survive the expiration or termination of any agreement and shall extend to and be binding upon the respective successors and assigns of the parties hereto.

25. SHOP INSPECTIONS AND TESTING - Seller is responsible only for those routine tests and inspections, which it performs on its own premises during the manufacturing process. Any further tests or inspections required by Buyer shall be at Buyer's expense.

26. MANUALS AND WARNINGS - Buyer accepts complete responsibility for ensuring that Seller's instruction manuals, and those of Seller's vendors, are distributed to and utilized by the product operators and that said individuals are properly trained to safely and competently operate the product. Buyer agrees to indemnify and hold harmless Seller from any and all claims, losses, damages, or expenses arising from or in any way connected with Buyer's responsibility hereunder.

27. SET-OFF - This Contract is not subject to a right of setoff by Buyer and Buyer agrees that any other debt Seller, whether disputed or not, cannot be set off against any payment owed by Buyer to Seller under this Contract.

28. CLEARANCES AND INTERFERENCES - The Buyer recognizes that Seller's product to be incorporated into Buyer/Owner's facility requires careful planning and calculation of clearances from other product and structures in the facility. Buyer's information including drawings, product layout and other structural dimensions identified in Buyer's specification and bid invitation are relied upon by Seller for their accuracy and completeness in order for Seller to supply product clear of costly interferences. All costs and expenses related to an interference or clearance requirement which was not completely and accurately identified to Seller prior to submittal of Seller's General Arrangement Drawings shall be paid by Buyer. An interference or clearance deficiency is that which causes Seller to redesign, modify or relocate Seller's product or cause the modification or relocation of structures, material or product of the Buyer, Owner or other contractors and suppliers.

29. MATERIAL ESCALATION – The price owed to Seller under this agreement is a fixed price, except with respect to the cost of materials used to produce the goods and equipment contemplated under this agreement. The purchase price with respect to materials is included in the purchase price agreed to herein, however Seller shall be entitled to an increase in the purchase price for materials in the event the cost incurred for such materials increases during Seller's performance of the manufacturing of the equipment being supplied under this agreement. Any increase in the purchase price shall be based on the actual increased cost of materials incurred by Seller from vendor proposal date to date of purchase order from Seller to vendor plus an added mark-up equal to the original margin included in the purchase price.
CURRENCY - The prices are quoted in USA dollars. Currency fluctuations from USA dollar to Canadian dollar or USA to Korean Won will be adjusted for at time of invoice.
FUEL – A fuel surcharge will be charged dependent upon actual fuel c osts incurred.

Indeck Power Equipment Company
5-Year Limited Pressure Vessel Special Warranty

Indeck (the Company) warrants that at the time of shipment the pressure vessel, limited to hot water generator headers, tubes, burner windbox and register assembly for the Indeck Boiler Model, TJW-C-50 high temperature hot water generator will be free from defects and materials and workmanship for a period of five (5) years from the date of shipment.

The foregoing is in lieu of all other warranties, oral or express or implied, including any warranties that extend beyond the description of the equipment or the parts or the services, there are no express warranties other than those stated herein, and to the extent permitted by law, there are no implied warranties of marketability or fitness for a particular purpose. The provisions of the special warranty as to duration, warranty adjustment and limitation of liability shall be the same for both implied warranties (if any) and express warranties.

This special pressure vessel warranty is solely as stated above and does not apply (a) when alternations or repairs are provided by persons not expressly approved by the Company; or (b) the materials used are not of the Company's specification and manufacture; or (c) abuse or misuse of the equipment is evident, including boilers subjected to cyclic thermal fatigue conditions; or (d) insulative or corrosive substances such as scale and improper chemical balance are involved and/or witnessed; or (e) if the unit identified in the proposal is not inspected annually by an authorized Company representative (which such annual inspection shall include viewing of both the waterside and fireside surfaces).

Owner must make claim of any breach of this Special Warranty by written notice to the Company's home office within ten (10) days of discovering any defect. The Company agrees, as its sole option, replace, but not install, such parts or pressure vessel components as it deems necessary ("Warranty Adjustment"). Any Warranty Adjustment(s) made by the Company shall not extend the warranty period set forth above.

The above Warranty Adjustment sets forth buyer's exclusive remedy and the extent of the Company's liability for breach of implied (if any) and express warranties, representations, instructions or defects from any cause in connection with the sale or use of equipment. The Company shall not be liable for any special, indirect or consequential damages or for loss, damage or expense, directly or indirectly arising from the use of the equipment or from any other cause whether based on warranty (expressed or implied) or tort or contract, and regardless of any advice or recommendations that may have been rendered concerning the purchase, installation or use of the equipment.

Extended Warranty - Maintenance Technician Schedule:

Indeck Service Tech Activity	
1	Travel to Jobsite
2	Check And Calibrate Instruments, Selected Boilers
3	Check And Calibrate Instruments, Selected Boilers
4	Burner tune up, Natural Gas, Selected Boilers
5	Burner tune up, Natural Gas, Selected Boilers
6	Burner tune up, Fuel Oil, Selected Boilers
7	Burner tune up, Fuel Oil, Selected Boilers
8	Perform client requested scope of work if necessary, Selected Boilers
9	Check And Calibrate Instruments, Selected Boilers
10	Check And Calibrate Instruments, Selected Boilers
11	Burner tune up, Natural Gas, Selected Boilers
12	Burner tune up, Natural Gas, Selected Boilers
13	Burner tune up, Fuel Oil, Selected Boilers
14	Burner tune up, Fuel Oil, Selected Boilers
15	Perform client requested scope of work of necessary, Selected Boilers
16	Travel from Jobsite

Service Price per year of anticipated equivalent per diem costs for the time and expected activities as show above. These rates are for reference only and included with the Extended Warranty Option pricing. Additional activities requested by the Buyer/Owner per visit/year requiring more time than as described above will revert to per diem rates.

Cost:	Year:	Unit *:
$37,460.00	TBD	Boiler 1&2
$39,333.00	TBD	Boiler 3&4
$41,299.65	TBD	Boiler 1&2
$43,364.63	TBD	Boiler 3&4
$45,532.86	TBD	Boiler 1&2

Since installation is scheduled to be over multiple years, the units to be inspected will be determined by mutual agreement as to which Generators are installed and commissioned first and need to be inspected.

10.3. DOMESTIC FIELD SERVICE RATE SHEET
WITH STANDARD TERMS AND CONDITIONS, Effective July 2, 2003

Indeck Field Service includes consultation, inspection, trouble-shooting, technical direction of installation, maintenance or repair (labor by others), start-up, initial adjustment, tests and instruction of plant personnel.

Indeck service is performed only by Indeck trained, duly qualified Service Technicians or Representatives from other companies hired by Indeck to perform a specific task. Such service does not include the supply of any parts. Indeck service is performed only on the basis of a bona fide purchase order for field service issued by the ultimate customer or his authorized representative, covering the specific service desired.

RATE CATEGORY		Rate Per Man/Day
A)	Standard Boiler Systems & Auxiliaries up to 300 BHP Saturated Steam.	$ 800.00
B)	Standard Boiler Systems & Auxiliaries above 300 BHP up to 75,000 PPH Saturated Steam, Generators and Chillers.	$ 900.00
C)	Custom Boiler Systems, Custom Instrumentation and Controls, Superheated Boiler Systems and Standard Boiler Systems above 75,000 PPH	$1,200.00

D) If an outside contractor, approved by INDECK is required and their rates for service are higher than the rates of INDECK, the customer will be charged the contractor rates that apply, plus 15%. If a technician from INDECK is also required to assist, the charges for the INDECK technician will be the same as rate category A, B, or C, with all standard terms and conditions to apply.

Billings will be based on rates in effect at the time service is rendered. Rates apply within the continental United States and Canada only (U.S. Dollars).

WORK HOURS AND WORK DAYS

A "man hour day" is eight (8) hours time, per man during normal day shift working hours. Normal working hours will be considered as 7:00 A.M. to 3:00 P.M., Monday through Friday, except for legal holidays, and includes 1-hour for lunch.

OVERTIME

Overtime applies to work performed before 7:00 a.m. and after 3:00 p.m., Monday through Friday, all time on Saturday and will be billed at one and one-half (1-1/2) times the regular rate. Any time on Sundays and holidays recognized by Indeck will be billed at two (2) times the regular rate.

DOMESTIC FIELD SERVICE (cont'd)

TRAVEL TIME

All Field Service Consultant travel time is chargeable at the standard rates that apply during the time traveled. Travel time is the actual time spent in travel between Wheeling, Illinois, the Field Service Consultant's home, or other assignment and the job site and from living quarters to job site and return. Travel time from job to job will be charged pro-rata.

MINIMUM BILLING

Service performed for less than four (4) hours will be invoiced at one-half (1/2) day; service in excess of four (4) hours, but less than eight (8) hours, will be invoiced as one (1) day.

TOOLS (All freight charges for tools will be for Customers' account).

Flue Gas Analyzer	$ 50.00/Day For Days Used
Boroscope	$250.00/Day For Days Used

EXPENSES

Travel and living expenses will be invoiced at actual, and supported by third party receipts, while meals will be billed at $30.00 per day.

A. Travel expenses include, but are not limited to, plane, train, private or rental automobile charges from the point of regularly assigned location of the Field Service Consultant, return, plus any required local travel. Company and private automobile charges are charged at the rate of $.75 per mile or $35.00 per day, whichever is greater. Taxi, gas, tolls, and parking fees are additional.

B. Living expenses include, but not limited to, lodging, meals, laundry, phone/fax, and incidental costs.

DELAYS

Field Service Consultant's time will be charged at the applicable rate when the Field Service Consultant is at the job site, but is unable to perform services requested because necessary equipment, utilities or support is not available.

STANDBY

On-Site Standby Time: If the Field Service Consultant is asked to remain on-site in a standby capacity, this time will be chargeable at the applicable rate of the day.

Off-Site Standby Time: If the Field Service Consultant is asked to be available on an "on call" basis while off-site, this availability will be chargeable at the applicable rate of the day.

DURATION

For service visits which extend beyond two (2) weeks, the Field Service Consultant will be allowed to travel home on the second weekend with time and expenses chargeable at the applicable rate.

DOMESTIC FIELD SERVICE (cont'd)

SCHEDULING

Indeck will attempt to schedule a Field Service Consultant visit per the customer's request when given as much advance notice as possible. Usually two (2) weeks notice is adequate. To arrange service, call Indeck Service Department. Phone: (847-541-8300, Fax: (847) 541-9372.

SUPPORT LABOR

All labor including, but not limited to, standby labor, initial check-out, start-up, and testing required to assist the Field Service Consultant at any time, shall be supplied by the Customer at no cost to Indeck.

PRICING

Purchase orders are subject to review and acceptance by Indeck. The total service amount specified in the customer's purchase order is provisional and subject to alteration. The final amount is to be calculated based on actual hours worked/traveled and actual expenses incurred.

FOREIGN SERVICE

Foreign service is available only upon application and acceptance by Indeck.

TERMS OF PAYMENT

Payment of charges shall be made in full within fifteen (15) days of receipt of invoice. Indeck reserves the right to charge interest of 2% per month on past due balances.

LIMITATIONS ON CONTRACT

These field service terms and conditions are expressly limited to these terms and conditions and shall govern the contract by which Indeck agrees to provide a Field Service Consultant. Indeck's acceptance of customer's purchase order is conditional on customer's assent to these terms and conditions. No other terms and conditions shall be binding on Indeck unless expressly agreed to in writing.

RESPONSIBILITY

Indeck's Field Service Consultants are authorized only to advise and consult with the customer or his representative and are not authorized nor licensed to operate the equipment. It shall be understood that responsibility for operation rests solely with the customer's operators and Indeck assumes no responsibility for the customer's personnel or representatives failure to properly perform their respective duties, and the presence of an Indeck Field Service Consultant at the customer's plant in no way relieves the customer's personnel or representatives of any of their responsibilities.

Indeck shall not be liable for any claims, losses, labor, expenses or damages, direct or consequential, resulting directly or indirectly from the service performed or for consequential loss or damage of any nature arising from any cause.

MEMORANDUM

Aviation Department

To:	Daniel Duffy, Senior Business Manager
From:	Virginia Trubek
Date:	June 19, 2012
Subject:	**FOI Request No. 13249 - Pramod J. Panackal (GDS Mechanical, Inc.)**
Copy:	S. Baer, J. Geddes, H. Lawrence, J. Heitmann, B. Wakuluk

Regarding the Freedom of Information Request submitted by Pramod J. Panackal (GDS Mechanical, Inc.) dated June 13, 2012, Newark Liberty International Airport does not have the documents responsive to the request. Please contact the Engineering Department for the requested material.

Virginia Trubek
Manager, Physical Plant & Redevelopment
New Jersey Airports

CONCURRED: _____ 6-20-12
Jeffery Pearse — Date
Deputy Director
Aviation Department

Appendix

Financial Capability

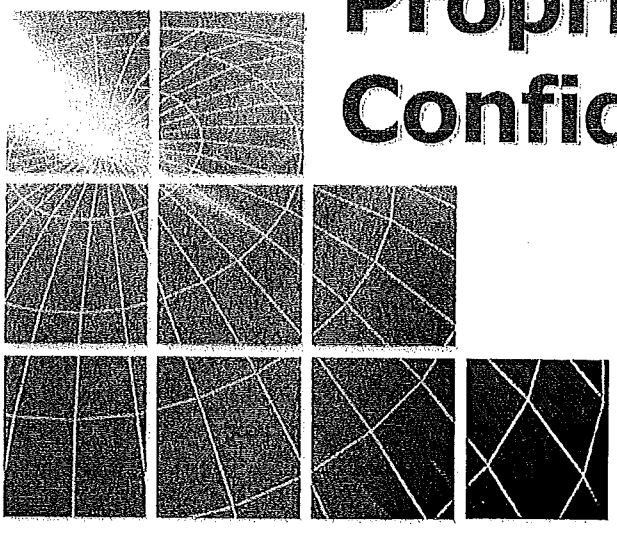
The following documents are included in this section in response to RFP page 3, *C. Financial Information.*

A. **Certified Financial Statements**

B. **Statement of Work** which CAI has on hand, including any work on which a bid and/or response has been submitted, containing a description of the work, the annual dollar value, the location by City and State, the current percentage of completion, the expected date for completion, and the name of an individual most familiar with CAI's work on these jobs.

C. **CAI's Banking Institution** provided below with all required information.

NAME & ADDRESS OF BANKING INSTITUTION	Wells Fargo Bank, NA Stabler Corporate Center 3701 Corporate Parkway, Suite 210 Center Valley, PA 18034
CHIEF BANKING REPRESENTATIVE	Charles Pulver, Vice President (610) 791-6912
FEIN	
DUN & BRADSTREET	07-372-7919
CREDIT SERVICE	None

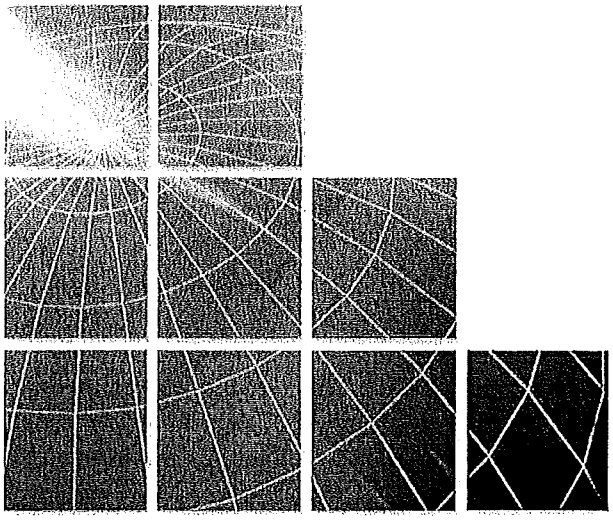


CAI
Computer Aid, Inc.
"World Leader in IT Process and Productivity."

FINANCIAL STATEMENTS

December 31, 2009
December 31, 2010

CONFIDENTIAL



CAI
Computer Aid, Inc.®
"World Leader in IT Process and Productivity."

Computer Aid, Inc. and Subsidiaries

December 31, 2010 and 2009

Consolidated Financial Statements and Auditors' Report

Concannon Miller
Certified Public Accountants Business Consultants

CONTENTS

INDEPENDENT AUDITORS' REPORT

To the Stockholders
Computer Aid, Inc. and Subsidiaries

We have audited the accompanying consolidated balance sheets of Computer Aid, Inc. and Subsidiaries as of December 31, 2010 and 2009 and the related consolidated statements of operations and comprehensive income, retained earnings, and cash flows for the years then ended. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Computer Aid, Inc. and Subsidiaries as of December 31, 2010 and 2009, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Concannon, Miller & Co., P.C.

Bethlehem, PA
July 29, 2011

1525 Valley Center Parkway, Suite 300, Bethlehem, PA 18017-2285
Phone 610-433-5501 **Fax** 610-433-5001 **Web** www.concannonmiller.com

COMPUTER AID, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

ASSETS	December 31, 2010	December 31, 2009
CURRENT ASSETS		
Cash and cash equivalents	$12,949,616	$ 7,318,651
Investments	383,371	193,290
Investments – other	20,983	21,514
Accounts receivable, net	46,508,111	42,736,793
Notes and other receivables	357,752	321,042
Prepaid expenses and other assets	3,133,718	2,574,184
Total Current Assets	63,353,551	53,165,474
OTHER ASSETS		
Notes and other receivables	31,143	53,517
Property and equipment, net	14,272,336	13,036,118
Goodwill, net	3,393,572	3,393,572
Total Assets	$81,050,602	$ 69,648,681
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES		
Notes payable – current portion	$ 316,141	$ 297,549
Notes payable – line of credit	11,786,476	7,619,048
Capital lease obligations	334,124	420,739
Accounts payable	17,569,313	20,029,007
Cash overdraft	5,329,978	435,797
Accrued expenses and other liabilities	1,596,476	1,810,363
Accrued compensation	3,405,818	2,443,041
Payroll tax liabilities	169,496	21,920
Total Current Liabilities	40,507,822	33,077,464
LONG-TERM LIABILITIES		
Notes payable	7,518,801	7,834,942
Other long-term liabilities	600,000	800,000
Capital lease obligations	0	366,230
Total Liabilities	48,626,623	42,078,636
STOCKHOLDERS' EQUITY		
Common stock, $.002 par value, 500,000 shares authorized; 98 shares issued and outstanding	100	100
Nonvoting common stock, $.002 par value, 4,500,000 shares authorized, 4,802 issued and outstanding	10	10
Additional paid-in capital	203,987	203,987
Minority interest	405,933	384,569
Noncontrolling interest in VIE	105,121	387,289
Retained earnings	31,423,093	26,998,457
Accumulated other comprehensive income		
Unrealized gains (losses) on marketable securities	13,845	(4,580)
Cumulative interest rate swap loss	(306,700)	(254,169)
Cumulative foreign currency hedge gain	685,443	180,233
Cumulative translation adjustment	(106,853)	(325,851)
Total Stockholders' Equity	32,423,979	27,570,045
Total Liabilities and Stockholders' Equity	$81,050,602	$ 69,648,681

The accompanying notes are an integral part of the consolidated financial statements.

COMPUTER AID, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME

	Years Ended December 31,	
	2010	2009
REVENUE	$252,338,602	$244,275,550
COST OF REVENUE	188,630,812	182,678,809
GROSS PROFIT	63,707,790	61,596,741
OPERATING EXPENSES		
Selling, general and administrative	48,195,592	47,726,425
Research and development	3,538,102	4,378,579
Bad debts	60,045	183
Depreciation and amortization	1,864,315	1,988,089
Total Operating Expenses	53,658,054	54,093,276
INCOME FROM OPERATIONS	10,049,736	7,503,465
OTHER INCOME (EXPENSE)		
Interest income	123,972	28,534
Interest expense	(920,532)	(1,005,542)
Other income	241,555	112,256
Total Other Income (Expense)	(555,005)	(864,752)
NONCONTROLLING INTEREST IN INCOME OF CONSOLIDATED VARIABLE INTEREST ENTITIES	(560,670)	(524,142)
MINORITY INTEREST IN INCOME OF CONSOLIDATED SUBSIDIARIES	(70,471)	(34,436)
NET INCOME	$ 8,863,590	$ 6,080,135

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

NET INCOME	$ 8,863,590	$ 6,080,135
OTHER COMPREHENSIVE INCOME (EXPENSE)		
Unrealized gain on marketable securities	18,425	78,362
Increase (decrease) in fair value of interest rate swap	(422,862)	167,122
Increase in fair value of foreign currency hedge	452,679	683,366
Cumulative translation adjustment	218,999	488,167
COMPREHENSIVE INCOME	$ 9,130,831	$ 7,497,152

The accompanying notes are an integral part of the consolidated financial statements.

COMPUTER AID, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF RETAINED EARNINGS

	Years Ended December 31,	
	2010	2009
RETAINED EARNINGS, JANUARY 1	$ 26,998,457	$ 23,592,484
NET INCOME	8,863,590	6,080,135
DISTRIBUTIONS TO STOCKHOLDERS	(4,438,954)	(2,674,162)
RETAINED EARNINGS, DECEMBER 31	$ 31,423,093	$ 26,998,457

The accompanying notes are an integral part of the consolidated financial statements.

COMPUTER AID, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended December 31,	
	2010	2009
CASH FLOWS FROM OPERATING ACTIVITIES		
Net income	$ 8,863,590	$ 6,080,135
Adjustments to reconcile net income to net cash provided by operating activities		
Depreciation and amortization	1,864,315	1,988,089
Loss (gain) on disposition of property and equipment	(1,760)	362
Noncontrolling interest/VIE	(282,168)	1,000,445
Minority interest in subsidiary	21,364	(69,097)
Changes in operating assets and liabilities		
Accounts receivable	(3,771,318)	2,397,767
Notes and other receivables	(14,336)	32,139
Prepaid expenses and other assets	(541,561)	756,018
Accounts payable	(2,007,015)	2,339,320
Cash overdraft	4,894,181	(4,689,921)
Accrued expenses and other liabilities	(213,887)	(106,813)
Accrued compensation	962,776	(150,064)
Payroll tax liabilities	147,576	(60,885)
Other long-term liabilities	(200,000)	(389,342)
Net Cash Provided by Operating Activities	9,721,757	9,128,153
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisition of property and equipment	(3,207,224)	(1,008,085)
Proceeds from disposition of property and equipment	90,478	7,000
Purchase of investments, net	(171,125)	70,016
Net Cash Used by Investing Activities	(3,287,871)	(931,069)
CASH FLOWS FROM FINANCING ACTIVITIES		
Net increase (decrease) in line of credit	4,167,428	(1,428,571)
Payment of notes payable	(297,549)	(381,405)
Net decrease in capital lease obligations	(452,845)	(396,021)
Distributions to stockholders	(4,438,954)	(2,674,162)
Net Cash Used by Financing Activities	(1,021,920)	(4,880,159)
EFFECT OF EXCHANGE RATE CHANGES ON CASH	218,999	488,167
NET INCREASE IN CASH AND CASH EQUIVALENTS	5,630,965	3,805,092
CASH AND CASH EQUIVALENTS , JANUARY 1	7,318,651	3,513,559
CASH AND CASH EQUIVALENTS, DECEMBER 31	$ 12,949,616	$ 7,318,651

The accompanying notes are an integral part of the consolidated financial statements.

ADDITIONAL CASH FLOW INFORMATION

	Years Ended December 31,	
	2010	2009
INTEREST PAID	$ 914,073	$ 995,493

The accompanying notes are an integral part of the consolidated financial statements.

NOTE 1 Description of Business and Summary of Significant Accounting Policies

Principles of Consolidation

The accompanying consolidated financial statements include the accounts of the Company, its wholly-owned subsidiaries, CAI Canada, Compworks, Inc., CAI Asia Pacific, CAI APAC Singapore and Professional Resource Group, Inc., its majority-owned subsidiary, CAI Europe, its 50% owned joint venture CAI – STA Philippines, Inc., CAI-STA Systems, and Ridgeview Limited Partners and TCS Systems, Inc., variable interest entities. All material intercompany transactions have been eliminated.

Business Operations

Computer Aid, Inc. (the "Company"), a Pennsylvania corporation, was incorporated on August 24, 1981. The Company is a full service information technology consulting firm specializing in strategic outsourcing to Fortune 1000 organizations. Its service offerings are divided into the following areas: strategic information technology consulting, application development, legacy systems outsourcing, information technology help desk services, systems integration and implementation, and staff augmentation. The Company operates throughout the United States and internationally from 23 locations which are aligned into four operating regions.

Cash and Cash Equivalents

For the purposes of the consolidated statements of cash flows, the Company considers cash on hand and deposits in banks as cash and cash equivalents. Cash in bank consists primarily of cash held by regional banks in money market sweep arrangements and business checking accounts.

Valuation of Investments in Securities at Fair Value

The Company adopted the provisions of FASB ASC Topic 820, *Fair Value Measurements and Disclosures*, effective January 1, 2008. Under ASC 810, fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (i.e., the "exit price") in an orderly transaction between market participants at the measurement date.

ASC 810 establishes a fair value hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that the most observable inputs be used when available. Observable inputs are those that market participants would use in pricing the asset or liability based on market data obtained from sources independent of the Company. Unobservable inputs reflect the Company's assumption about the inputs market participants would use in pricing the asset or liability developed based on the best information available in the circumstances.

NOTE 1 Description of Business and Summary of Significant Accounting Policies (Continued)

Valuation of Investments in Securities at Fair Value (Continued)

The fair value hierarchy is categorized into three levels based on the inputs as follows:

Level 1 – Valuations based on unadjusted quoted prices in active markets for identical assets or liabilities that the Company has the ability to access. Valuation adjustments and block discounts are not applied to Level 1 securities. Since valuations are based on quoted prices that are readily and regularly available in an active market, valuation of these securities does not entail a significant degree of judgment.

Level 2 – Valuations based on quoted prices in markets that are not active or for which all significant inputs are observable, either directly or indirectly.

Level 3 – Valuations based on inputs that are unobservable and significant to the overall fair value measurement.

Revenue Recognition

Revenue related to professional services rendered under time-and-materials type contracts is recognized as the work is performed. Revenue from maintenance contracts is recognized proportionally, each month, over the contract period.

Accounts Receivable

The Company uses the reserve method to account for potentially uncollectible receivables. The balance in the reserve at December 31, 2010 and 2009 was $1,266,643 and $1,273,277, respectively.

Depreciation Expense

Depreciation is provided on a straight-line basis over the estimated useful lives of the assets which is typically five to thirty-nine years. Depreciation on buildings under capital leases is provided on a straight-line basis over the terms of the leases.

Goodwill

Goodwill represents the excess of the cost of companies acquired over the fair value of their net assets at date of acquisition. At December 31, 2010 and 2009, the gross carrying amount of goodwill was $3,575,404, and accumulated amortization was $181,832 for each year.

In accordance with FASB ASC Topic 350, *Intangibles – Goodwill and Others*, the Company tests the goodwill value on an annual basis. The Company has determined the goodwill has not been impaired; therefore, no impairment loss has been recognized.