



Working Together for a
Better Tomorrow. Today.

BID SPECIFICATION PACKAGE

for

PGS TURBINE OVERHAUL 2023-INNER SHELL INSPECTION

C132692

Bid Opening Date/Time

July 25, 2023 at 2:00 p.m. (local time)
City of Grand Island, City Hall
100 East 1st Street, P.O. Box 1968
Grand Island, NE 68802-1968

Contact Information

Tylor Robinson
City of Grand Island – Utilities Department
Platte Generating Station
Email: trobinson@giud.com
Phone: 308/385-5496

Date issued: July 7, 2023

**ADVERTISEMENT TO BIDDERS
FOR
PGS TURBINE OVERHAUL 2023-INNER SHELL INSPECTION
FOR
CITY OF GRAND ISLAND, NEBRASKA**

Sealed bids for PGS Turbine Overhaul 2023-Inner Shell Inspection will be received at the office of the City Clerk, 100 E. First Street, P.O. Box 1968, Grand Island, Nebraska 68802, until **Tuesday, July 25, 2023 at 2:00 p.m. local time**, FOB the City of Grand Island, freight prepaid. Bids will be publicly opened at this time in the Grand Island City Hall City Clerk's Office located on 1st floor of City Hall. **Submit an original and three copies if submitting by mail**. Bid package and any Addendas are also available on-line at www.grand-island.com under Business-Bids and Request for Proposals-Bid Calendar under the bid opening date. Bidding documents, plans and specifications for use in preparing bids may be downloaded from the QuestCDN website www.QuestCDN.com for a \$42.00 fee. Submitting through QuestCDN requires one original document of the bid to be uploaded. **Bids received after the specified time will not be considered.**

The successful bidder will be required to comply with fair labor standards as required by Nebraska R.R.S.73-102 and comply with Nebraska R.R.S. 48-657 pertaining to contributions to the Unemployment Compensation Fund of the State of Nebraska. Successful bidder shall maintain a drug free workplace policy. Every public contractor and his, her or its subcontractors who are awarded a contract by the City for the physical performance of services within the State of Nebraska shall register with and use a federal immigration verification system to determine the work eligibility status of new employees physically performing services within the State of Nebraska.

Each bidder shall submit with the bid a certified check, a cashiers check, or bid bond payable to the City of Grand Island Treasurer in an amount no less than five percent (5%) of the bid price which shall guarantee good faith on the part of the bidder and the entering into a contract within fifteen (15) days at the bid price if accepted by the City. **Your certified check, cashiers check or bid bond must be submitted in a separate envelope attached to the outside of the envelope containing the bid.** **Each envelope must be clearly marked indicating its contents. Failure to submit the necessary qualifying information and correct number of copies in clearly marked and separate envelopes will result in your bid not being opened or considered.** Only surety companies authorized to do business in the State of Nebraska may issue bid bonds.

Bids will be evaluated by the Purchaser based on price, schedule, quality, adherence to schedule, plan and specifications, economy and efficiency of operation, experience and reputation of the bidder, ability, capacity, and skill of the bidder to perform contract required and adaptability of the particular items to the specific use intended.

The Purchaser reserves the right to reject any or all bids, to waive irregularities therein, and to accept whichever bid that may be in the best interest of the City, at its sole discretion.

No bidder may withdraw his/her bid for a period of thirty (30) days after date of bid opening.

RaNae Edwards, City Clerk

Advertised

(All bids must be submitted on this form)

PGS TURBINE OVERHAUL 2023-INNER SHELL INSPECTION
BID DATA FORM

CITY OF GRAND ISLAND
GRAND ISLAND, NE

THE undersigned Bidder, having examined the plans, specifications, general and special conditions, and other proposed contract documents, and all addenda thereto, and being acquainted with and fully understanding all conditions relative to the location, arrangement and specified materials and equipment for the proposed work, HEREBY proposes to identify and communicate the clean, inspect and repair shop services required for a medium steam turbine-generator inspection for a 45-day outage (breaker-to-breaker) FOB the City of Grand Island, freight prepaid, at the following price:

<u>ITEM DESCRIPTION</u>	<u>EXTENDED COST</u>
Base Bid:	
Material	\$ _____
Labor	\$ _____
Applicable Sales tax*	\$ _____
Total Base Bid	\$ _____

*** If bidder fails to include sales tax in their bid price or takes exception to including sales tax in their bid price, the City will add a 7.5% figure to the bid price for evaluation purposes; however, the City will only pay actual sales tax due.**

Exceptions Noted - Bidder acknowledges there are *Exceptions* and/or *Clarifications* noted to the above bid, and those exceptions are fully explained on a separate sheet, clearly marked, and included with the Bid.

Bidder Company Name Date

Company Address City State Zip

Print Name of Person Completing Bid Signature

Email: _____ Telephone No. _____

According to Nebraska Sales and Use Tax Requirements, Section 1-017, Contractors, check which option you have selected to file with the Nebraska Department of Revenue:

Nebraska law provides a sales and use tax exemption on contractor labor charges for the construction, repair, or annexation of any structure used for the generation, transmission, or distribution of electricity. Separately stated contractor labor would be exempt, all materials are taxable according to the contractor's option.

Option 1 (Section 1-017.05) _____ Option 2 (Section 1-017.06) _____ Option 3 (Section 1-017.07) _____

If the Nebraska sales and use tax election is not filed or noted above, the contractor will be treated as a retailer under Option 1 for sales and use tax purposes.

By checking this box, Bidder acknowledges the specified completion date of the project is **November 4, 2023** to align with the projected outage end date.

By checking this box, Bidder acknowledges that Addenda Number(s) _____ were received and considered in Bid preparation.

Note: If Bidder supplies individual unit pricing information as supplemental pricing to the base material and labor cost above, said individual pricing is proprietary information and should not be released under a public records request. The total base bid is not considered proprietary information and will be released pursuant to City Procurement Code.

The City reserves the right to reject any bid section(s) submitted by the successful bidder. In submitting the bid, it is understood that the right is reserved by the City to reject any and all bids; to waive irregularities therein and to accept whichever bid that may be in the best interest of the City. It is understood that this bid may not be withdrawn by the bidder until after thirty (30) days from bid opening.

In submitting the bid, the bidder acknowledges the bid guarantee will be forfeited to and become the property of the City of Grand Island, Nebraska, as liquidated damages should this bid be accepted and a contract be awarded to them and they fail to enter into a contract in the form prescribed and to furnish the required bonds within fifteen (15) days, but otherwise the aforesaid bid guarantee will be returned upon signing the Contract and delivering the approved bonds.

Insurance: Bidder acknowledges that their bid includes compliance with the attached insurance requirements.

The Bidder agrees to furnish the required performance and payment bond and to enter into a contract within fifteen (15) days after acceptance of this Bid, and further agrees to complete all work covered by the foregoing bid in accordance with specified requirements. No work shall commence until the Certificate of Insurance and bonds (when required) are approved by the City and the Contract is executed. The proposed work can commence after the Contract is signed and the required bond is approved.

End of Bid Data Form

INSTRUCTIONS TO BIDDERS

1. GENERAL INFORMATION.

The following instructions outline the procedure for preparing and submitting Bids. Bidders must fulfill all requirements as specified in these Documents.

2. TYPE OF BID.

Bidders shall be required to submit prices for all items listed in the Bid Data Form.

3. PREPARATION OF BIDS.

Bidders shall use only the Bid Data Form provided in these Documents. All blank spaces in the Bid Data Form must be filled in, preferably in BLACK ink, in both words and figures where required. No changes to the wording or content of the forms is permitted. Written amounts shall govern in case of discrepancy between the amounts stated in writing and the amounts stated in figures.

Prices stated shall be f.o.b. with freight and full insurance paid by Bidder, to the job site located in Grand Island, Nebraska.

The Bidder shall acknowledge receipt of all Addenda in the Bid Data Form. Bids received without acknowledgement or without the Addendum enclosed will be considered informal.

Individual unit pricing as listed on the Bid Data Form or supplied as supplemental information may be deemed proprietary information and not be released under a public records request. The total amount of the bid is not considered proprietary information and will be released pursuant to City Procurement Code.

4. SUBMISSION OF BIDS.

All Bids must be submitted intact with the correct number of copies no later than the time prescribed, at the place, and in the manner set forth in the ADVERTISEMENT FOR BIDS. Bids must be made on the Bid Data Form provided herein. Each Bid mailed must be submitted intact in a sealed envelope, so marked as to indicate its contents without being opened, and delivered in person or addressed and mailed in conformance with the instructions in the ADVERTISEMENT FOR BIDS.

5. BID SECURITY.

Bids must be accompanied by cash, a certified check, or cashier's check drawn on a bank which is insured by the Federal Deposit Insurance Corporation, or a bid bond issued by a Surety authorized to issue such bonds in the state where the Work is located, in the amount of 5 percent of the bid amount payable to OWNER. This bid security shall be given as a guarantee that the Bidder will not withdraw their Bid for a period of **thirty (30) days after** bid opening, and that if awarded the Contract, the successful Bidder will execute the attached Contract within the time specified.

The Attorney-in-Fact that executes this bond on behalf of the Surety must attach a notarized copy of his/her power of attorney as evidence of his/her authority to bind the Surety on the date of execution of the bond. Where State Statute requires, certification by a resident agent shall also be provided.

6. RETURN OF BID SECURITY.

Within fifteen (15) days after the award of the Contract, the OWNER will return the bid securities to all Bidders whose Bids are not to be further considered in awarding the Contract. All other retained bid

securities will be held until the Contract has been finally executed, after which all bid securities, other than Bidders' bonds and guarantees which have been fortified, will be returned to the respective Bidders whose Bids they accompanied.

7. BASIS OF AWARD.

The award will be made by the OWNER on the basis of the Bid from the lowest responsive, responsible Bidder which, in the OWNER's sole and absolute judgment will best serve the interest of the OWNER. All Bids will be considered on the following basis:

Delivery time	Conformance with the terms of the Bid Documents
Bid price	
Cost of installation	
Suitability to project requirements	Responsibility and qualification of Bidder

The OWNER reserves the right to reject all Bids, or any Bid not in conformance with the intent of the Bid Documents, and to waive any informalities and irregularities in said Bids.

8. EXECUTION OF CONTRACT.

The successful Bidder shall, within fifteen (15) days after receiving notice of award, sign and deliver to the OWNER the Contract hereto attached together as required in these Bid Documents. Within fifteen (15) days after receiving the signed Contract from the successful Bidder, the OWNER's authorized agent will sign the Contract. Signature by both parties constitutes execution of the Contract.

9. TIME OF COMPLETION.

The time of completion of the Work to be performed under this Contract is the essence of the Contract. The time allowed for the completion of the Work is stated in the Bid Data Form.

10. GRATUITIES AND KICKBACKS.

City Code states that it is unethical for any person to offer, give, or agree to give any City employee or former City employee, or for any City employee or former City employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, or preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefor. It shall be unethical for any payment, gratuity, or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or any person associated therewith, as an inducement for the award of a subcontract or order.

11. FISCAL YEAR.

The City of Grand Island, Nebraska operates on a fiscal year beginning October 1st and ending on the following September 30th. It is understood and agreed that any portion of this agreement which will be performed in a future fiscal year is contingent upon the City Council adopting budget statements and appropriations sufficient to fund such performance.

CONTRACT AGREEMENT

THIS AGREEMENT made and entered into by and between **[SUCCESSFUL BIDDER]**, hereinafter called the Contractor, and the **CITY OF GRAND ISLAND, NEBRASKA**, hereinafter called the City.

WITNESSETH:

THAT, WHEREAS, in accordance with law, the City has caused contract documents to be prepared and an advertisement calling for bids to be published for *PGS TURBINE OVERHAUL 2023-INNER SHELL INSPECTION*; and

WHEREAS, the City, in the manner prescribed by law, has publicly opened, examined, and canvassed the bids submitted, and has determined the aforesaid Contractor to be the lowest responsive and responsible bidder, and has duly awarded to said Contractor a contract therefore, for the sum or sums named in the Contractor's bid, a copy thereof being attached to and made a part of this Contract;

NOW, THEREFORE, in consideration of the compensation to be paid to the Contractor and of the mutual agreements herein contained, the parties have agreed and hereby agree, the City for itself and its successors, and the Contractor for itself, himself/herself, or themselves, and its, his/her, or their successors, as follows:

ARTICLE I. That the following documents shall comprise the Contract, and shall together be referred to as the "Agreement" or the "Contract Documents";

1. This Contract Agreement.
2. City of Grand Island's Specification for this project.
3. **[NAME OF SUCCESSFUL BIDDER]** bid signed and dated **[DATE OF BID]**.

In the event of any conflict between the terms of the Contract Documents, the provisions of the document first listed shall prevail.

ARTICLE II. That the Contractor shall (a) furnish all tools, equipment, superintendence, transportation, and other construction materials, services and facilities; (b) furnish, as agent for the City, all materials, supplies and equipment specified and required to be incorporated in and form a permanent part of the completed work; (c) provide and perform all necessary labor; and (d) in a good substantial and workmanlike manner and in accordance with the requirements, stipulations, provisions, and conditions of the Contract documents as listed in the attached General Specifications, said documents forming the Contract and being as fully a part thereof as if repeated verbatim herein, perform, execute, construct and complete all work included in and covered by the City's official award of this Contract to the said Contractor, such award being based on the acceptance by the City of the Contractor's bid;

ARTICLE III. That the City shall pay to the Contractor for the performance of the work embraced in this Contract and the Contractor will accept as full compensation therefore the sum (subject to adjustment as provided by the Contract) of **[DOLLAR AMOUNT] (\$00.00)** for all services, materials, and work covered by and included in the Contract award and designated in the foregoing Article II; payments thereof to be made in cash or its equivalent in the manner provided in the General Specifications.

The total cost of the Contract includes:

Materials	\$.00
Labor	\$.00
Applicable Sales tax	\$ <u>.00</u>
Total	\$.00

Contractor Tax Option _____

The City of Grand Island, Nebraska operates on a fiscal year beginning October 1st and ending on the following September 30th. It is understood and agreed that any portion of this agreement which will be performed in a future fiscal year is contingent upon the City Council adopting budget statements and appropriations sufficient to fund such performance.

ARTICLE IV. The Contractor hereby agrees to act as agent for the City in purchasing materials and supplies for the City for this project. The City shall be obligated to the vendor of the materials and supplies for the purchase price, but the Contractor shall handle all payments hereunder on behalf of the City. The vendor shall make demand or claim for payment of the purchase price from the City by submitting an invoice to the Contractor. Title to all materials and supplies purchased hereunder shall vest in the City directly from the vendor. Regardless of the method of payment, title shall vest immediately in the City. The Contractor shall not acquire title to any materials and supplies incorporated into the project. All invoices shall bear the Contractor's name as agent for the City. This paragraph will apply only to these materials and supplies actually incorporated into and becoming a part of the finished product of the PGS TURBINE OVERHAUL 2023-INNER SHELL INSPECTION.

ARTICLE V. That the Contractor shall start work as soon as possible after the Contract is signed and the required bonds and insurance are approved, and that the Contractor shall deliver the equipment, tools, supplies, and materials F.O.B. Platte Generating Station, and complete the work on or before **November 4, 2023** to align with the projected outage end date.

ARTICLE VI. The Contractor agrees to comply with all applicable State fair labor standards in the execution of this Contract as required by Section 73-102, R.R.S. 1943. The Contractor further agrees to comply with the provisions of Section 48-657, R.R.S. 1943, pertaining to contributions to the Unemployment Compensation Fund of the State of Nebraska. During the performance of this Contract, the Contractor and all subcontractors agree not to discriminate in hiring or any other employment practice on the basis, of race, color, religion, sex, national origin, age or disability. The Contractor agrees to comply with all applicable Local, State and Federal rules and regulations. The Contractor agrees to maintain a drug-free workplace policy and will provide a copy of the policy to the City upon request. Every public contractor and his, her or its subcontractors who are awarded a contract by the City for the physical performance of services within the State of Nebraska shall register with and use a federal immigration verification system to determine the work eligibility status of new employees physically performing services within the State of Nebraska.

ARTICLE VII. Gratuities and kickbacks: City Code states that it is unethical for any person to offer, give, or agree to give any City employee or former City employee, or for any City employee or former City employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, or preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any

Contract #

Issued:

program requirement or a contract or subcontract, or to any solicitation or proposal therefor. It shall be unethical for any payment, gratuity, or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or any person associated therewith, as an inducement for the award of a subcontract or order.

[SUCCESSFUL BIDDER]

By _____ Date _____

Title _____

CITY OF GRAND ISLAND, NEBRASKA

By _____ Date _____

Mayor

Attest: _____

City Clerk

The Contract is in due form according to law and hereby approved.

Attorney for the City

Date _____

DRAFT

REQUEST FOR BIDS - GENERAL SPECIFICATIONS

The Bid shall be in accordance with the following and with all attached BID DATA and DETAILED SPECIFICATIONS.

All prices are to be furnished and installed FOB, Grand Island, Nebraska. **All prices shall be firm, and shall include all sales and use taxes as lawfully assessed under laws and regulations of the State of Nebraska.** * If bidder fails to include sales tax in their bid price or takes exception to including sales tax in their bid price, the City will add a 7.5% figure to the bid price for evaluation purposes; however, the City will only pay actual sales tax due.

Mailed bids shall include the following on the **outside** of the mailing envelope: **“PGS Turbine Overhaul 2023- Inner Shell Inspection”**. All bids submitted by mail must include **an original and three copies** of the bid. The bid specification and on-line bidding forms are also available at <http://www.grand-island.com/business/bids-and-request-for-proposals/bid-calendar> under the bid opening date and “Click here for bid document link” through QuestCDN for a \$42.00 fee. If submitting through QuestCDN, **one** original document of the bid is required to be uploaded. No verbal bids will be considered. All sealed bids are due no later than Tuesday, **July 25, 2023 at 2:00 p.m. local time.** to:

Mailing Address: City Clerk
City Hall
P. O. Box 1968
Grand Island, NE 68802-1968

Street Address: City Clerk
City Hall
100 E. First Street
Grand Island, NE 68801

Bids will be opened at this time in the City Hall City Clerk’s Office located on 1st floor of City Hall. Any bid received after the specified date will not be considered.

Bids will be evaluated by the Purchaser based on price, schedule, quality, adherence to schedule, plan and specifications, economy and efficiency of operation, experience and reputation of the bidder, ability, capacity, and skill of the bidder to perform contract required and adaptability of the particular items to the specific use intended.

The successful bidder will be required to comply with fair labor standards as required by Nebraska R.R.S.73-102 and comply with Nebraska R.R.S. 48-657 pertaining to contributions to the Unemployment Compensation Fund of the State of Nebraska. Contractor shall maintain a drug free workplace policy. Every public contractor and his, her or its subcontractors who are awarded a contract by the City for the physical performance of services within the State of Nebraska shall register with and use a federal immigration verification system to determine the work eligibility status of new employees physically performing services within the State of Nebraska.

The equipment and materials must be new, the latest make or model, unless otherwise specified. Prior to approving the invoice for payment, the City reserves the right to thoroughly inspect and test the equipment to confirm compliance with specifications. Any equipment or material which does not meet the City's requirements will be returned at vendor's expense for correction. The invoice will be paid after approval at the next regularly scheduled City Council meeting and occurring after departmental approval of invoice; the City Council typically meets the second and fourth Tuesday of each month. Invoices must be received well in advance of Council date to allow evaluation and processing time.

Each bidder shall submit with the bid a certified check, a cashier's check, or bid bond payable to the City of Grand Island in an amount no less than five percent (5%) of the bid price which shall guarantee good faith on the part of the Bidder and the entering into a contract within fifteen (15) days at the bid price if accepted by the City. **Your certified check, cashier's check or bid bond must be submitted in a separate envelope attached to the outside of the envelope containing the bid.** Each envelope must be clearly marked indicating its contents. Failure to submit the necessary qualifying information and correct number of copies in clearly marked and separate envelopes will result in your bid not being opened or considered. Only surety companies authorized to do business in the State of Nebraska may issue bid bonds.

Successful bidder shall comply with the City's insurance requirements; All bids shall be valid for at least thirty (30) working days after the bid deadline for evaluation purposes.

All bids must be on the bid form and must be signed and dated to be accepted. If exceptions and/or clarifications are noted to the bid, those exceptions must be fully explained on a separate sheet, clearly marked, and included with the Bid. Any changes that are found made to the original bid specification, other than Owner generated Addendums, would result in your bid not being considered. Please contact Tylor Robinson at 308-385-5495 or email trobinson@giud.com for questions concerning this specification.

**PLATTE GENERATING STATION TURBINE OVERHAUL 2023
DETAILED/TECHNICAL SPECIFICATION
HP INNER SHELL INSPECTION & REPAIRS
SCOPE OF WORK**

Specification ID: TG-2

Description: HP Inner Shell Inspection & Repairs

Plant ID: City of Grand Island NE Unit 1 – 122 MWs

Project Location:

City of Grand Island
Platte Generating Station
1035 W. Wildwood Drive
Grand Island, NE 68801

Outage Start Date: September 21, 2023

Projected Outage End Date: November 4, 2023

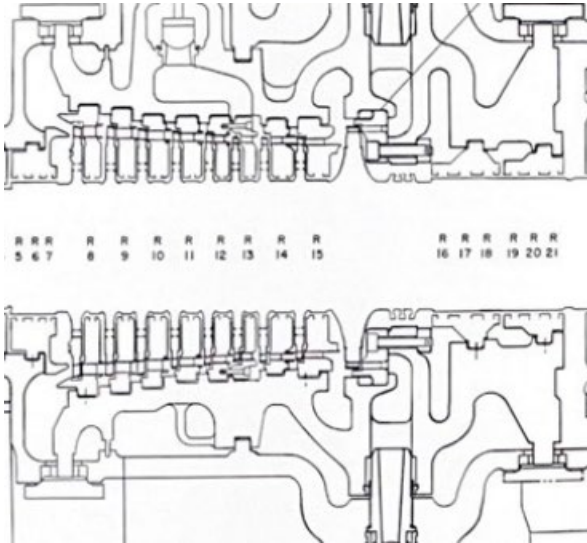
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1. Introduction

The component scope will include the following:

- 1.1. HP Turbine Inner Shell
- 1.2. Blow Down Valve Pipe Section
- 1.3. HP/IP Diaphragms – TBD Major/Minor Repairs- Budgetary Estimates



2. Purpose

This bid specification is to identify and communicate the clean, inspect, and repair shop services required for a medium steam turbine-generator (GE Lynn) inspection for the City of Grand Island Unit 1 during a 45-day site outage (breaker-to-breaker).

3. Scope

The scope of work to be performed to include:

- 3.1. Develop a job plan to include but not limited to the following:
 - 3.1.1. Provide shop schedule of activities
 - 3.1.2. Quality Program
 - 3.1.3. Provide organization and staffing plan

- 3.1.4. Provide recommended parts list for repairs and plan to meet schedule
- 3.1.5. Provide adequate updates on shipping requirements to the City of Grand Island
- 3.2. Incoming inspection
- 3.3. Remove existing CV steam inlet sealing ring assemblies (6) and prep bores for installation of NEW sealing ring assemblies. Remove existing BDV seal ring assembly (1) and prep bore for installation of new sealing rings. Install new ring assemblies supplied by the City of Grand Island.
- 3.4. Document existing installed position of nozzle plate, including shell drop checks upper and lower halves, prior to removal. Remove both nozzle sections for inspection and possible repairs.
- 3.5. Complete dust blasting of inner HP shell and associated components. Complete dust blasting of sealing ring end of BDV pipe.
- 3.6. Complete NDE of all components.
- 3.7. Provide detailed datasheets and visual, dimensional, and NDE inspection results to the City of Grand Island, with repair recommendations, as soon as possible to make final decisions on repairs with minimal impact on overall schedule & budget.

4. Bidders

Bidders are to quote all cleaning and inspection work on a firm price basis and include all supervision, labor, subcontracts, materials, tools, and equipment necessary to perform the work per the bid specification, unless furnished by the City of Grand Island. Repairs may be performed under T&M basis.

5. Definitions

Bidder: The entity submitting a proposal to perform the scope of work in accordance with this specification.

Contractor: The person, partnership, or corporation entering contract for the performance of the work.

Owner: City of Grand Island

Purchaser: The appropriate Supply Chain contact identified in the RFP document.

O/C/C: Open, Clean, Close of various components for inspection, and repair by others.

SPOC: City of Grand Island Site Point of Contact.

Lock Out/Tag Out: Practice and procedures to protect workers from the release of hazardous energy.

Change Request: A formal proposal for an alteration to a product or system, submitted 24 hours in advance.

Confined Space: A step that may require a confined space permit.

Critical Lift: Lift requiring rigging review and pre-job briefing with all involved.

Special Tooling: Originally supplied turbine generator tooling from the OEM or equivalent.

Primavera Milestone: Activities in the schedule that represents the most important deadlines, deliveries, startups, or drop-dead dates for the project.

Work: The scope of work including labor, tools, and material to be performed.

6. Project Timing:

Preliminary, though key, project milestone dates are defined below. Bidders should be aware that these outage dates are subject to change based on grid system operator demands.

Activity	Responsibility	Target Date
Release RFQ	Purchaser	7/7/23
Submit Proposals	Bidders	7/25/23
Verbal Contract Award	Purchaser	7/27/23

7. Name Plate Information

Platte Generating Station Unit 1 is an indoor unit:

OEM: General Electric

Model: Lynn Medium Steam

Turbine SN: 179789

Generator Serial Number: 316x282
Last Turbine Inspection: 2017 Major Outage

8. Job Plan

Develop a job plan to include, but not limited to, the following.

- 8.1.1. Shipping and permits will be handled by the City of Grand Island
- 8.1.2. Shop inspections
- 8.1.3. Schedule anticipated associated with the scope of work
- 8.1.4. Quality Program to ensure work is performed correctly
- 8.1.5. Organization and staffing plan to perform the work and provide the City of Grand with POCs

9. Quality Program

- 9.1. Contractor Quality Program
 - 9.1.1. Contractor will provide a detailed definition and presentation of their Quality Program that integrates the City of Grand Island QA/QC Document on this project.
- 9.2. Frequency of Reporting
 - 9.2.1. All records, data points, photo points, witness points, hold points, close out forms, and other documentation shall be supplied, by the Contractor, to the City of Grand Island in real time throughout the project. These real-time quality records will include both initial and final quality records. In no circumstance shall this time, of reporting, exceed the shift in which the quality item occurred.
 - 9.2.2. All quality forms shall be included in the final report.

10. Project Schedule

- 10.1. Schedule Development Contractor
 - 10.1.1. Milestone Requirement Overview

- 10.1.1.1. Major milestones to include in the schedule are start milestones for the start and completion of major tasks. The schedules will be task driven with true logic.

11. Organization Chart & Staffing

11.1. The City of Grand Island Project Team will consist of the following.

- 11.1.1. Plant Turbine Generator Deck Manager: The Deck Manager is the SPOC during the execution of the overall project. This person is responsible for all day to day work activities, both on and off site, and allocation of overhead crane across Contractors and plant work groups.
- 11.1.2. Turbine Generator Technical Director: The TG Technical Director is responsible for providing OEM quality technical assistance as well as alternative options with pros and cons for pricing, schedule, and risk to all people involved with the project and the final report.
- 11.1.3. The Contractor shall provide an ample force of workers and supervisors with enough equipment, tools, and facilities to perform the work at the rate of progress defined by the contract and project milestones at the minimum levels listed below:

12. Pricing Sheet

12.1. Base Work Scope

- 12.1.1. Bidder shall provide price quotations as defined in the Pricing Appendix located in Appendix B for the base scope of work. Pricing is firm priced and by package only, then supplemented by Gage pricing for selected potential extra work (repairs).
- 12.1.2. Appendix B for T&M Pricing Tables
- 12.1.3. Appendix C for Gage Repair T&M Daily (2 shift) Pricing Tables
- 12.1.4. Bidder shall provide T&M Rates including Markups for Consumables, Materials, Transportation, Subcontracted Contractors, etc.
- 12.1.5. Straight time rate:
- 12.1.6. Overtime rate:
- 12.1.7. Tooling extras:

13. Execution Milestone Dates

The following is a list of execution milestones dates which align with defined work scope and or groups of work scopes identified within the work break down structure of this work package and others. This list is not intended to be all inclusive of the milestones which will be identified throughout the detail planning of the project. Note: “**S**” is defined as the outage start date listed on the title page of this specification. + are number of days beyond the designated day while – is dates prior.

13.1. Milestone Dates:

- 13.1.1. Job Plan Submitted: **S** – 30 days
- 13.1.2. Hp/lp Shell Out: **S** + 7 days
- 13.1.3. Hp/lp Shell Ships to Shop: **S** + 8 days
- 13.1.4. All Hp/lp Diaphragms Out: **S** + 8 days
- 13.1.5. Ship Hp/lp Diaphragms to Shop: **S** + 9 days
- 13.1.6. All LP Diaphragms Out: S + 10 days
- 13.1.7. Ship LP Diaphragms to Shop: **S** + 11 days
- 13.1.8. Hp/IP Diaphragms Ship to Site: **S** + 35 days
- 13.1.9. HP Inner Shell Ships to Site: **S** + 37 days
- 13.1.10. LP Diaphragms ship to site: **S** + 37 days
- 13.1.11. Final Report Submitted: **S** + 80 days

14. Milestone Invoicing

The Contractor shall invoice the following short of Liquidated Damages, if incurred, as addressed in Section 15 upon meeting satisfactory completion of key execution milestone dates and coming to the calendar date.

- 14.1. Job Plan Provided = 10%
- 14.2. Mobilization complete = 10%
- 14.3. All site disassembly & inspections complete = 40%
- 14.4. Full release of unit = 30%
- 14.5. Final report submitted = 10%

15. Cancellation Structure

In the event the City of Grand Island elects to cancel the work package for convenience, after the work package has been awarded to the Contractor, at any time before the date that is 30 days prior to the Job Plan execution milestone, Contractor shall not be entitled to any compensation. After such date, termination by the City of Grand Island for convenience will be governed by the Luminant terms and conditions.

15.1. There will be no cancellation, escalation, or adder charges, in the event the City of Grand Island choses to move the project to start within 1 year from the defined project start date.

16. Warranty

The Contractor warrants that the Services will be performed with the degree of skill and care that is required by current, good, and sound professional procedures and practices, and in conformance with generally accepted professional standards prevailing at the time the Services are performed to ensure that all Services performed are correct and appropriate.

The Contractor warrants all work under the Contract to be of good quality and free from any defective or faulty material and workmanship. Contractor agrees to guarantee all work under this Contract for a period of one (1) year from the date of Final Settlement by the Owner. If any unsatisfactory condition or damage develops within the time of this guarantee due to materials or workmanship that are defective, inferior, or not in accordance with the Contract, as reasonably determined by the Owner, then the Contractor shall, when notified by the Owner, immediately place such guaranteed Work in a condition satisfactory to the Owner. For any Work so corrected, Contractor's obligation hereunder to correct defective Work shall be reinstated for an additional one-year period, commencing with the date of acceptance of such corrected Work.

17. Insurance

The Contractor shall comply with the City of Grand Island Insurance requirements.

18. Performance and Payment Bond

The Contractor shall file with the OWNER Performance and Payment Bonds in the full amount (100 percent) of the Contract price, as security for the faithful performance of the Contract and the payment of all persons supplying labor and materials for the Work under this Contract, and to cover all guarantees against defective workmanship or materials, or both, for a period of 1 year after the date of final acceptance of the Work by the Owner. The Surety furnishing these bonds shall have a record of service satisfactory to the OWNER, be authorized to do business in the State where the OWNER's project is locates and shall be named on the current list of approved Surety Companies, acceptable on Federal bonds as published by the Audit Staff, Bureau of Accounts, U.S. Treasury Department.

The Attorney -in-Fact (Resident Agent) who executes these bonds on behalf of the Surety must attach a notarized copy of their power-of-attorney as evidence of their authority to bind the Surety on the date of execution of the bond.

19. Reference & Experience

19.1. Please provide resumes of key staffing personnel

(Project Manager, Site Superintendent, Safety person, General Foreman, etc.)
you will employ for the Work performed.

19.2. Please provide a list of similar work or projects for other Customers

Beginning with the most recent - including Customer name, key contact, title,
phone no. and email address.

20. Proposal format (Exceptions & Clarifications)

20.1. Bidder must provide a proposal that includes:

- 20.1.1. An identical structure of bullet points as listed in the Technical Specification document.
- 20.1.2. Exceptions for a specific section should be included in appropriate section using the same bullet point number for easy identification.
- 20.1.3. Additional services, support, and clarifications Bidder supplies should be clearly separated from Exceptions in the specific section.
- 20.1.4. The Bidder shall state in the proposal any, and all exceptions to spec.
- 20.1.5. If there are no exceptions, it shall be so stated in writing.
- 20.1.6. Pricing to be provided broken out into format in Appendix C for all bids.
- 20.1.7. Indicate your complete mailing address for our purchase order.

- 20.1.8. Proposed alternatives shall be identified. After award of the contract, should the Contractor desire to deviate from the specification, the Contractor shall present in writing the intended deviation and shall receive written approval from the contract manager prior to implementing the change. The Contractor is responsible for compliance with all the detailed requirements in the specification. Nothing in the specification shall relieve the Contractor of the responsibility for performing, in addition to the requirements of the specification, such tests, inspections, design checks, and other activities that the Contractor considers necessary to ensure the quality of the job. Any unapproved nonconformity with the specification shall be changed to complete conformity at the Contractor's expense.

21. Proposal format (Exceptions & Clarifications)

- 21.1. Bidder must provide a proposal that includes:
- 21.1.1. An identical structure of bullet points as listed in the Technical Specification document.
 - 21.1.2. Exceptions for a specific section should be included in appropriate section using the same bullet point number for easy identification.
 - 21.1.3. Additional services, support, and clarifications Bidder supplies should be clearly separated from Exceptions in the specific section.
 - 21.1.4. The Bidder shall state in the proposal all exceptions to spec.
 - 21.1.5. If there are no exceptions, it shall be so stated in writing.
 - 21.1.6. Pricing to be provided broken out into format in Appendix C for all bids.
 - 21.1.7. Indicate your complete mailing address for our purchase order.
 - 21.1.8. Proposed alternatives shall be identified. After award of the contract, should the Contractor desire to deviate from the specification, the Contractor shall present in writing the intended deviation and shall receive written approval from the contract manager prior to implementing the change. The Contractor is responsible for compliance with all the detailed requirements in the specification. Nothing in the specification shall relieve the Contractor of the responsibility for performing, in addition to the requirements of the specification, such tests, inspections, design checks, and other activities that the Contractor considers necessary to ensure the quality of the job. Any unapproved nonconformity with the specification shall be changed to complete conformity at the Contractor's expense.

22. Evaluation

All proposals submitted will be evaluated by the Owner based on price, schedule, quality, economy of operation, experience of contractor, and adherence to specification. The owner reserves the right to reject any or all bids or waive informalities and to accept whichever bid that may be in the best interest of owner, at its sole discretion. The owner reserves the right to accept portions of the bid while disregarding portions that the purchaser deems unnecessary. The purchaser reserves the right to request revisions to the estimated time and material repairs to budget for possible repairs that are unknown. All revisions to the bid will be calculated using the provided rate sheets. Bids must be received by **2:00 P.M. Tuesday, July 25, 2023.**

Bidder is solely responsible for obtaining any clarifications to this specification as may be required for the Bidder to submit an accurate and complete bid proposal.

23. Terms & Conditions

Provide all other proposed terms and conditions which will be in effect during the performance of the work as a separate attachment with the bid. Any exceptions the Contractor wishes to take regarding the Owners specifications and contract documents must be submitted with the bid.

Time is of the essence in the evaluation of proposals, the execution of contract documents and/or issuance of a Purchase Order for the execution of the work. Submittal of proposals that include terms and conditions unacceptable to the Owner, or that lack the information and clarity required by these specifications may be subject to rejection at the sole discretion of the Owner.

24. Appendix A – Base Scope Activities

1.1.2. HP Inner Shell & Diaphragms

Cleaning	Inner HP Shell	1.1.2.9.3.	Dust blast HP inner shell as required for proper NDE inspection
Cleaning	Inner HP Shell	1.1.2.9.3.	Dust blast inner shell diaphragm fits & steam joints to remove all existing scale
Cleaning	Inner HP Shell	1.1.2.9.3.	Dust blast nozzle plate & shell location of nozzle plate after removal for NDE inspection
Cleaning	Inner HP Shell	1.1.2.9.3.	Dust blast sealing ring assembly shell bores after removal of ring assemblies
Cleaning	HPIP Diaphragms	1.1.2.10.1.	Dust blast diaphragms sent for "Major" repair. TBD at unit opening on site.
Cleaning	BDV Pipe	1.1.2.11.1.	Dust blast BDV pipe at the seal ring location
Inspection	BDV Pipe	1.1.3.1.1.	NDE & dimensional inspect the BDV pipe at the seal ring location. Report findings to the City of Grand Island.

Inspection	Inner HP Shell	1.1.3.1.1.	Perform incoming visual inspection of inner shell & nozzle plate. photograph any significant damage or cracks to nozzle plate & shell.
Inspection	Inner HP Shell	1.1.3.1.1.	Inspect shell diaphragm fits for crush pin dimpling. Provide repair recommendations and pricing.
Inspection	Inner HP Shell	1.1.3.1.2.	Document nozzle plate as found position to shell joint by drop check. Shell axial position reference required
Inspection	Inner HP shell	1.1.3.1.2.	Provide detailed report of all shell & nozzle plate findings with recommendations to the City of Grand Island as soon as possible to get approval for repair scope.
Inspection	HPIP Diaphragms	1.1.3.2.1	Perform incoming visual inspection of diaphragm/s sent with inner shell for "Major" repair. TBD
Repairs	BDV Pipe	1.1.4.1.4.	Provide budgetary estimate for grinding true the seal ring surface location of the BDV pipe.
Repairs	HP Diaphragms	1.1.4.1.1	Provide budgetary estimate for a HP diaphragm 410 & Inconel major repair with this proposal. Assume 800 MHR\$ for pricing purposes
Repairs	IP Diaphragms	1.1.4.1.2	Provide budgetary estimate for a IP diaphragm 410 & Inconel major repair with this proposal. Assume 800 MHR\$ for pricing purposes
Repairs	Inner HP Shell	1.1.4.1.3	Remove all shell diaphragm support ledge keys keeping track of specific location. Repair all broken screws and install the correct key at each location with new screws. Remove nozzle plate & inlet sealing ring assemblies including BDV pipe sealing ring assembly. Perform NDE inspections of nozzle plate & shell locations where the plate is located. Report any findings to the City of Grand Island.
Repair	Inner HP Shell	1.1.4.1.3	Prep Inlet sealing ring assembly bores for installation of new ring assemblies.
Repairs	Inner Shell	1.1.4.1.3.	Install new sealing ring assemblies at all locations (7) supplied by the City of Grand Island. Final sealing ring bore dimensions will be provided by the City of Grand Island
Repairs	Inner Shell	1.1.4.1.3.	Perform axial position shift of the nozzle as part of final assembly to shell. Axial shift amount will be supplied by the City of Grand Island. Assume for bidding purpose this will be accomplished by machining of the nozzle plate to obtain the desired axial shift toward the shell sealing surface.
Repairs	Inner Shell	1.1.4.1.3.	Blue check and machine as required to obtain 100% nozzle plate sealing surface contact to the inner shell
Repairs	Inner Shell	1.1.4.1.3.	Install nozzle plate, torque and secure bolting as required. Provide documentation of plate to shell drop checks and final axial position ref dimension.

25. Appendix C – TG-2 HP Inner Shell & Diaphragm Shop Pricing Tables

Vendor Name:

Vendor Contact Information:

Proposal Date:

Proposal Revision:

Please provide breakdown prices in the tables below.

Base Scope Pricing

Working 2-6-10 Shift

Work Package	Work Package Title	Work Description	Firm Price	Duration
TG-2	Clean/Inspect/Repair	HP Inner Shell / Seal Ring Ass.	\$_____	__ days
TG-2	Clean/Inspect/Repair	BDV Pipe / Seal Ring	\$_____	__ days
			Total: \$_____	

Gage Scope Pricing

Working 2-6-10 shift

Work Package	Work Package Title	Work Description	EST. Price	Duration
TG-2	Repair	HP Diaphragm 410 Major Repair - Assume 200 MHRS for pricing purposes	\$ _____	_ days
TG-2	Repair	IP Diaphragm 410 Major Repair - Assume 200 MHRS for pricing purposes	\$ _____	_ days
TG-2	Repair	HP Diaphragm Inconel Major Repair - Assume 200 MHRS for pricing purposes	\$ _____	_ days
TG-2	Repair	IP Diaphragm Inconel Major Repair - Assume 200 MHRS for pricing purposes	\$ _____	_ days
TG-2	Repair	Restore BDV pipe sealing ring location	\$ _____	_ days
Total:			\$ _____	

MINIMUM INSURANCE REQUIREMENTS
CITY OF GRAND ISLAND, NEBRASKA

The successful bidder shall obtain insurance from companies authorized to do business in Nebraska of such types and in such amounts as may be necessary to protect the Bidder and the interests of the City against hazards or risks of loss as hereinafter specified. This insurance shall cover all aspects of the Bidder's operations and completed operations. Failure to maintain adequate coverage shall not relieve Bidder of any contractual responsibility or obligation. Minimum insurance coverage shall be the amounts stated herein or the amounts required by applicable law, whichever are greater.

1. WORKERS COMPENSATION AND EMPLOYER'S LIABILITY

This insurance shall protect the Bidder against all claims under applicable State workers compensation laws. This insurance shall provide coverage in every state in which work for this project might be conducted. The liability limits shall not be less than the following:

Workers Compensation	Statutory Limits
Employers Liability	\$100,000 each accident
	\$100,000 each employee
	\$500,000 policy limit

2. BUSINESS AUTOMOBILE LIABILITY

This insurance shall be written in comprehensive form and shall protect the Bidder, Bidder's employees, or subcontractors from claims due to the ownership, maintenance, or use of a motor vehicle. The liability limits shall not be less than the following:

Bodily Injury & Property Damage	\$ 500,000 Combined Single Limit
---------------------------------	----------------------------------

3. COMPREHENSIVE GENERAL LIABILITY

The comprehensive general liability coverage shall contain no exclusion relative to explosion, collapse, or underground property. The liability limits shall not be less than the following:

Bodily Injury & Property Damage	\$ 500,000 each occurrence
	\$1,000,000 aggregate

4. UMBRELLA LIABILITY INSURANCE

This insurance shall protect the Bidder against claims in excess of the limits provided under employer's liability, comprehensive automobile liability, and commercial general liability policies. The umbrella policy shall follow the form of the primary insurance, including the application of the primary limits. The liability limits shall not be less than the following:

Bodily Injury & Property Damage	\$1,000,000 each occurrence
	\$1,000,000 general aggregate

5. ADDITIONAL REQUIREMENTS

The City may require insurance covering a Bidder or subcontractor more or less than the standard requirements set forth herein depending upon the character and extent of the work to be performed by such Bidder or subcontractor.

Insurance as herein required shall be maintained in force until the City releases the Bidder of all obligations under the Contract.

The Bidder shall provide and carry any additional insurance as may be required by special provisions of these specifications.

6. CERTIFICATE OF INSURANCE

Satisfactory certificates of insurance shall be filed with the City prior to starting any work on this Contract. **The certificates shall show the City as an additional insured on all coverage except Workers Compensation. The certificate shall state that thirty (30) days written notice shall be given to the City before any policy is cancelled (strike the "endeavor to" wording often shown on certificate forms). If the Bidder cannot have the "endeavor to" language stricken, the Bidder may elect to provide a new certificate of insurance every thirty (30) days during the contract. Bidder shall immediately notify the City if there is any reduction of coverage because of revised limits or claims paid which affect the aggregate of any policy.**

SUMMARY OF TURBINE DESIGN FEATURES

CUSTOMER: Platte Generating Station, Grand Island Utilities Dept

TURBINE NO. 197789

TURBINE TYPE: Reheat Double Flow

DRIVING: 122,000 KVA, 13,800 V, Hydrogen Cooled-Generator, 375 V Static Exciter

NOTE: The following summary lists the specific design features and components of this turbine.

Front standard type: 8.1 with sliding support

PERFORMANCE

Rating 100,000 kw

Steam conditions

Initial pressure 1800 psig

Initial temperature 1000/1000 FTT

Back pressure 2.5 Inches Hg Abs

Speed

Rated 3600 rpm

Pre-emergency 3850 rpm

Trip 4014 rpm

High-speed set point 3800 rpm

EXTRACTION

Number of uncontrolled extractions 4

THERMODYNAMIC DESIGN

Valve sizes

Packing dump 5 inches

Temperature alarm in exhaust set at 175 F

High-pressure minimum-flow alarm switch set at 125,000 lb/hr

MECHANICAL DESIGN

Active thrust bearing: Tapered
Orifice size 21/32 inch

Inactive thrust bearing: Tapered
Orifice size 21/32 inch

No. 1 bearing: Elliptical
Orifice size 1/4 inch
Minimum bearing clearance .010 inch

No. 2 bearing: Elliptical
Orifice size 7/16 inch
Minimum bearing clearance .017

No. 3 bearing: Elliptical
Orifice size 3/8 inch
Minimum bearing clearance .016 inch

No. 4 bearing: Elliptical
Orifice size 1/2 inch
Minimum bearing clearance .017 inch

No. 5 bearing: Elliptical
Orifice size 1/2 inch
Minimum bearing clearance .017 inch

Casing drain valve: Double

Turning gear on turbine exhaust bearing

Nameplate language: English

Thermometers: Degrees Fahrenheit

Gages: English units

Accessory panels
Control center

Provision for borescope inspection

- First stage
- Three stages in reheat casing
- L-3 stage in exhaust
- L-2 stage in exhaust
- L-1 stage in exhaust
- L stage thru manhole
- One in stop valve

Pressure tap for boiler control in stage valve shell

MECHANICAL DESIGN (CONT'D)

Controlled-start thermocouples

- First-stage shell inner surface
- First-stage shell outer surface
- Steam chest inner surface
- Steam chest outer surface
- Reheat bowl inner surface
- Reheat bowl outer surface

Relief diaphragm

Vacuum breaker: Motorized

Fog nozzles

Turning gear motor 460 vac

Turning gear panel

Sight flow for the oil from the

- No. 1 bearing is located on front standard
- No. 2 bearing is located on bearing bracket
- No. 3 bearing is located on bearing bracket
- No. 4 bearing is located on bearing cap
- No. 5 bearing is located on bearing cap

Lifting devices

- Rotor lifting beam
- Hydraulic jacks for initial opening of joint
- Casing lifting sling

TURBINE CONTROL SYSTEM

Electrohydraulic control

EMERGENCY TRIP SYSTEM

Stop valve (full arc)

Electrical trip device

Nonreturn valve trip relay

Blowdown valve

Air dump valve

Right-hand reheat stop and intercept valve

EMERGENCY TRIP SYSTEM (CONT'D)

Left-hand reheat stop and intercept valve

Low bearing pressure trip relay

Low vacuum trip switch

Thrust wear detector

Overspeed governor exerciser

Overspeed governor

Emergency trip

Manual trip signal switch

LUBRICATION AND HYDRAULIC SYSTEM

Oil cooler type: Gravity flow

Cooling water: Fresh

Oil tank size 6 x 12 x 5½ feet

Oil tank capacity 1750 gallons

Oil level gage: Alarm contact

Low bearing oil pressure alarm switch: Closes at 18 psig; opens at 22 psig

Bearing and seal oil pump 460 vac
Pump test solenoid valve

Emergency bearing and seal oil pump 125 vdc
Pump test solenoid valve

Bearing header transmitter

HYDRAULIC POWER UNIT

Pump motors(2) 460 vac, speed 1200 rpm

Pump test solenoid valve

Thermometer

Pressure gage

Pressure transmitter: Electric

HYDRAULIC POWER UNIT (CONT'D)

Fluid-level alarm

Low-hydraulic-pressure alarm switch

Nonreturn valve trip relay

SHAFT SEAL AND VENT SYSTEM

Steam seal regulator

Gland exhauster system: Surface condenser and motor-driven air blower
Motor 460 vac

AUXILIARY DEVICES

Zero speed device alarms at zero rpm

Active thrust wear detector alarm and trip: Closes at 21 psig; opens at 17 psig

Inactive thrust wear detector alarm and trip: Closes at 21 psig; opens at 17 psig

STEAM VALVE SWITCHES

Stop valve circuit breaker switch

Stop valve closed position switch

Stop valve test position switch

Stop valve open position switch

Reheat stop valve circuit breaker switch

Reheat stop valve open position switch

Reheat stop valve closed position switch

Intercept valve circuit breaker switch

Intercept valve open position switch

Intercept valve closed position switch

Intercept valve quick closing position switch

Blowdown valve switch

TEMPERATURE INDICATING DEVICES

Dial thermometers on turbine for oil drains from

- Active thrust
- Inactive thrust
- No. 1 bearing
- No. 2 bearing
- No. 3 bearing

Remote indications from oil drains

- Active thrust
- Inactive thrust
- No. 1 bearing
- No. 2 bearing
- No. 3 bearing
- No. 4 bearing
- No. 5 bearing

Temperature measuring devices for oil cooler

- Oil in
- Oil out

Thermocouples in bearings

- Upper half of active thrust bearing
- Upper half of inactive thrust bearing
- No. 1 bearing
- No. 2 bearing
- No. 3 bearing
- No. 4 bearing
- No. 5 bearing

Exhaust temperature switch alarms at 175 F and trips and alarms at 225 F

Oil cooler temperature switch alarms at 130 F

ESTIMATED GENERATOR DATA

GENERATOR NO. 316X282

NAMEPLATE DATA

2 Poles, 3 Phase, Wye Connected, 60 Hertz
 Total temperature at rating guaranteed not to exceed:
 100 C on armature by detector, 120 C on field by resistance
 Maximum cold gas temperature: 46 C
 Inlet water: 95 F

	Rating	Capability	Capability
Gas 98% Purity (PSIG)	30	15	0.5
KVA	122,000	112,240	85,400
Armature Amps	5104	4696	3573
Armature Volts	13,800	13,800	13,800
Field Amps	621	588	498
Excitation Volts	375	375	375
Power Factor	0.90	0.90	0.90

DESIGN DATA

Gas 98% Purity PSIG	Maximum KVA One Cooler Out of Service
30	97,600
15	89,792
0.5	68,320

No-Load Field Current	274 Amperes
Three Phase Armature Winding Capacitance	0.903 Microfarads
Armature Winding DC Resistance (per phase)	0.00193 Ohms at 100 C
Field Winding DC Resistance	0.520 Ohms at 125 C

COLLECTOR AND BRUSH DATA

Collector brushes: 28 per set	Recommended Grade: National Carbon 634
Collector minimum safe operating diameter: 12 inches	
Shaft grounding brushes: 2 per set	Recommended Grade: National Carbon 634
If brushes spark or chatter, refer to: GEK-35474	

GAS COOLER DATA

Inlet water temperature: 95 F	Water flow at rated load: 792 gpm
Head loss through cooler: 12.5 feet	Gas flow through generator: 63,000 cfm
Gas space in generator: 1640 cubic feet	

AIR FILTER

Type of Air Filter	Farr 44
Size of Air Filter	30 x 10 x 2
Number of Air Filters	2

REACTANCE DATA (PER UNIT)

DIRECT AXIS

QUADRATURE AXIS

Saturated Synchronous	(Xdv) 1.667	(Xqv) 1.596
Unsaturated Synchronous	(Xdi) 1.667	(Xqi) 1.596
Saturated Transient	(X'dv) 0.175	(X'q) 0.430
Unsaturated Transient	(X'di) 0.236	
Saturated Subtransient	(X''dv) 0.122	(X''qv) 0.118
Unsaturated Subtransient	(X''di) 0.167	(X''qi) 0.166
Saturated Negative Sequence	(X2v) 0.115	
Unsaturated Negative Sequence	(X2i) 0.159	
Saturated Zero Sequence	(Xov) 0.057	
Unsaturated Zero Sequence	(Xoi) 0.073	
Leakage Reactance	(XLM,OEX) 0.136	
	(XLM,UEx) 0.136	

Field Time Constant Data (Sec. at 125 C)

Open Circuit	(T'do) 5.533	(T'qo) 0.380
Three Phase Short Circuit Transient	(T'd3) 0.580	(T'q) 0.380
Line to Line Short Circuit Transient	(T'd2) 0.901	
Line to Neutral Short Circuit Transient	(T'd1) 1.045	
Short Circuit Subtransient	(T''d) 0.023	(T''q) 0.023
Open Circuit Subtransient	(T''do) 0.033	(T''qo) 0.083

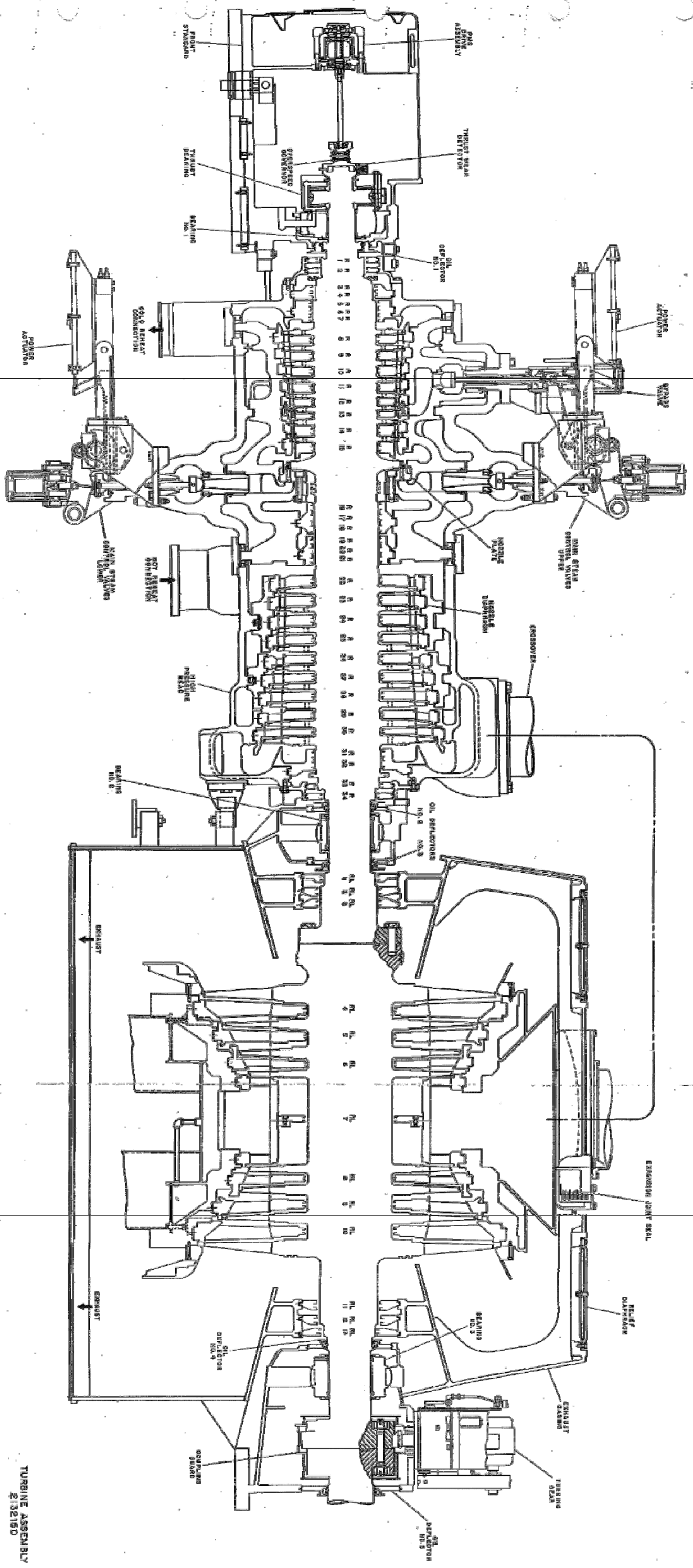
Armature DC Component Time Constant Data (Sec. at 100 C)

Three Phase Short Circuit	(Ta3) 0.248
Line to Line Short Circuit	(Ta2) 0.248
Line to Neutral Short Circuit	(Ta1) 0.206

Per Unit Armature Winding Sequence Resistance Data

Positive	(R1) 0.003
Negative	(R2) 0.014
Zero	(Ro) 0.005

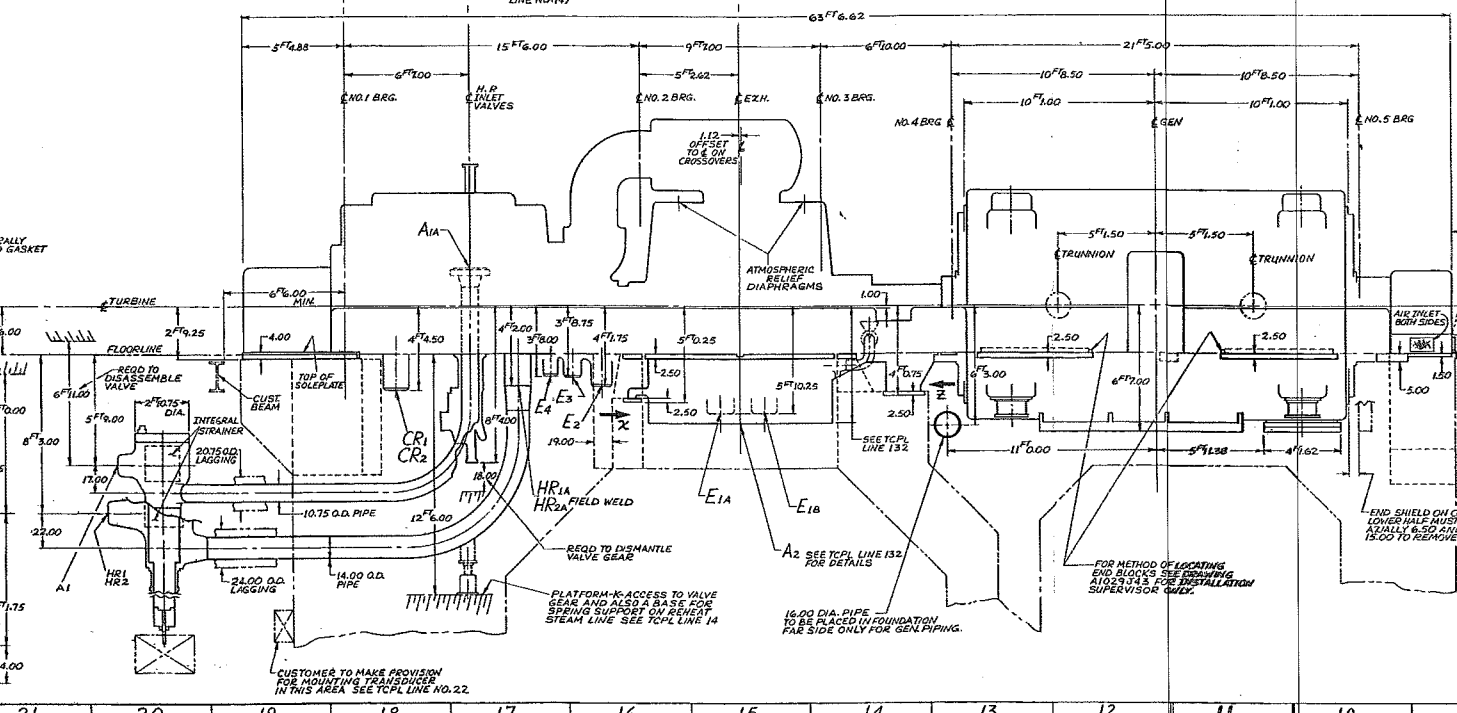
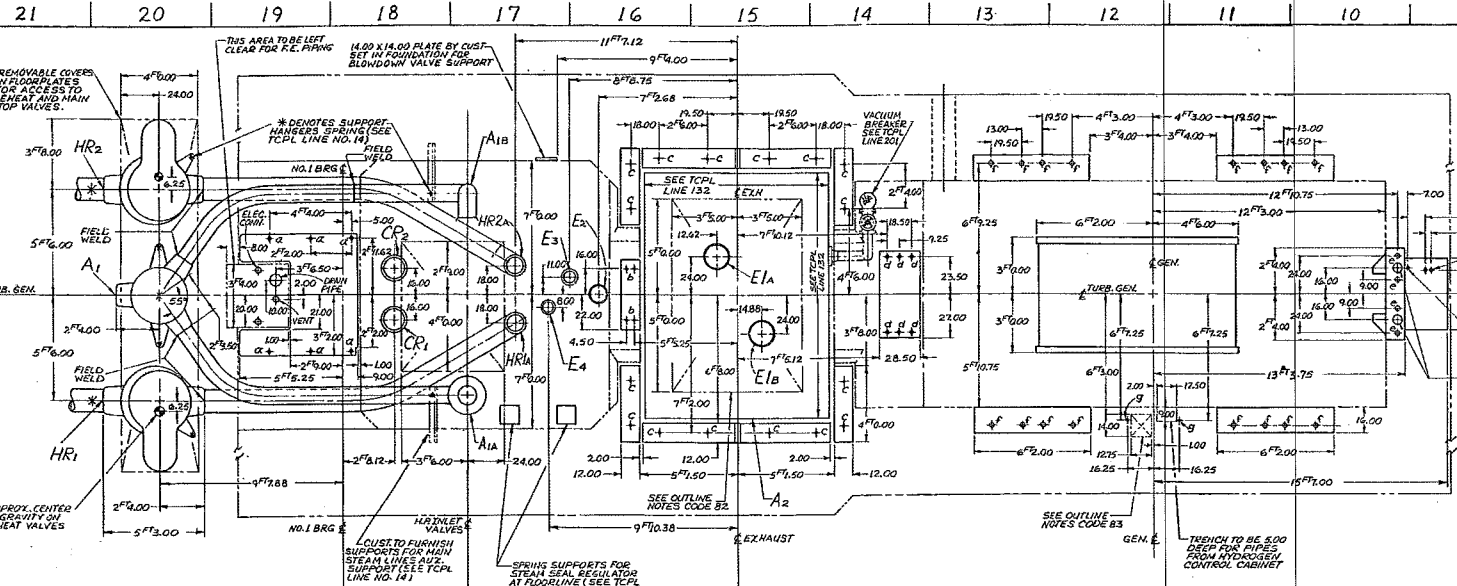
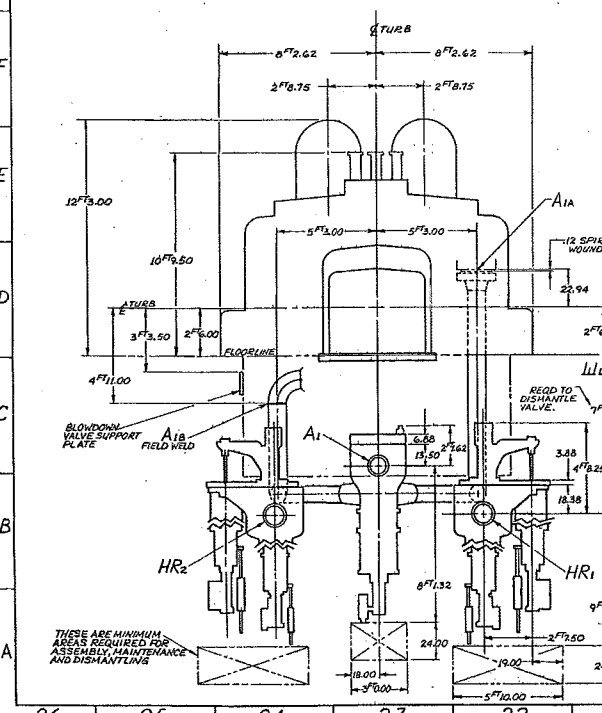
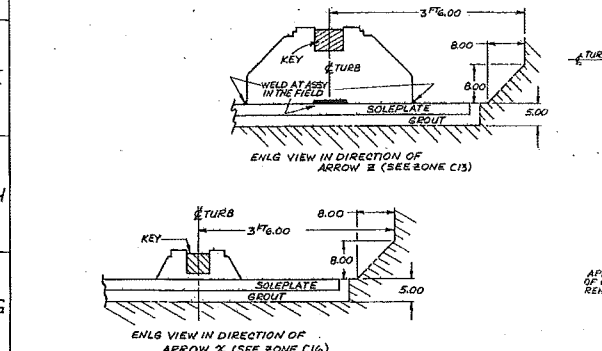
Rotor Short-time Thermal Capacity (I_2) ² t	30
Turbine and Generator Combined Inertia Constant (H)	2.75 KW Sec./KVA



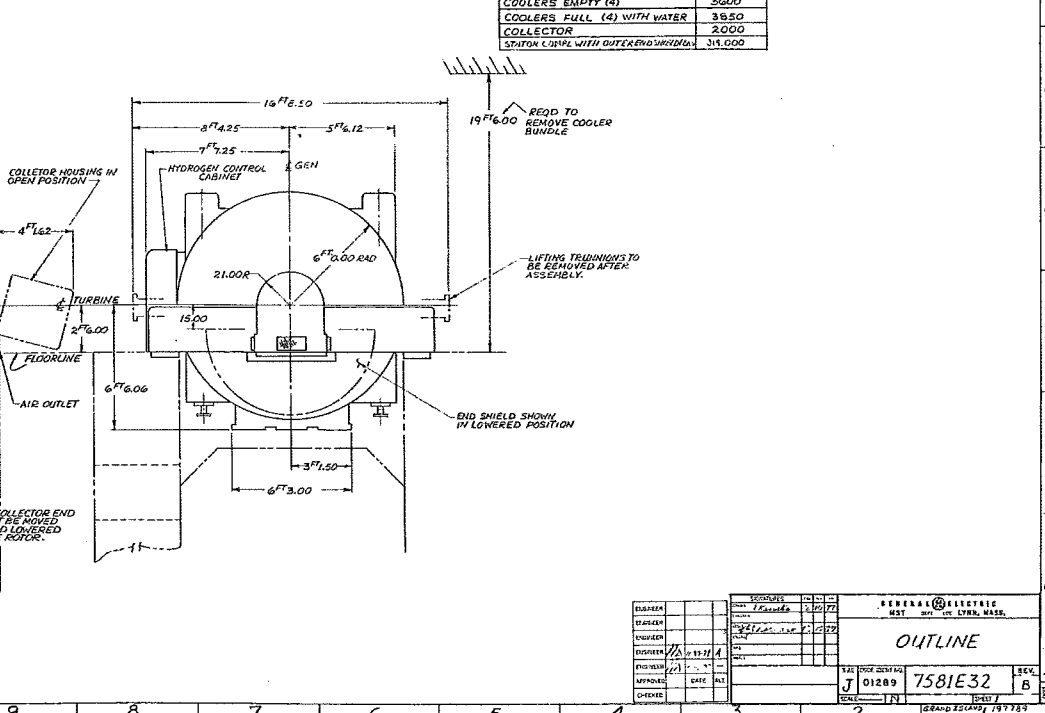
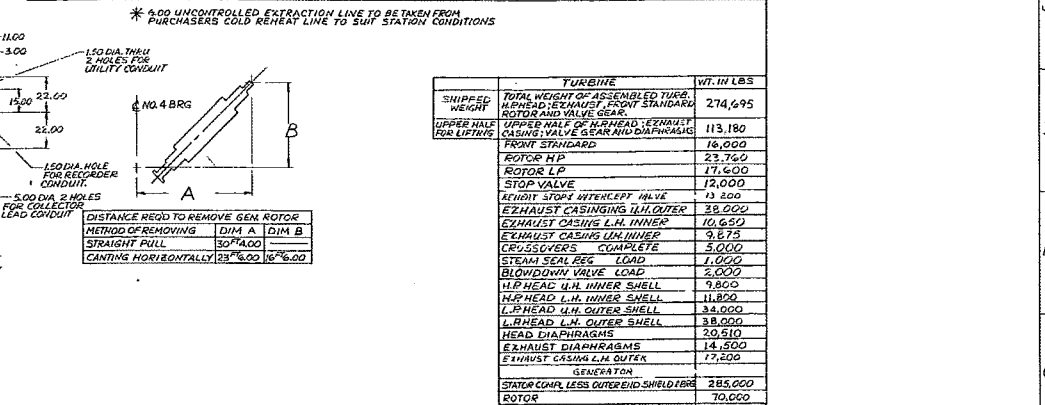
TURBINE ASSEMBLY
 2132150

ANCHOR BOLT DATA	SEE T.C.P.L. LINE NO. 3
SYMBOL AND SIZE	MAX. DIM. D
A 1/2	1.50
B 3/4	2.00
C 1 1/4	2.50
D 1 3/4	3.00
E 2	4.00
F 2 1/2	4.50
G 3	5.00
H 3 1/2	5.50
I 4	6.00

LIFTING DATA	
LOAD ON CRANE HOOK	A DIM TO CLEAR DIM TO CLEAR
ROTOR AND ROTOR L.P.	26'10.00 23'11.00
UPPER HALF CASINGS AND VALVE GEAR	25'11.00 21'10.00
EXHAUST CASINGS AND VALVE GEAR	24'10.00 23'5.00



SYMBOL AND SIZE	MAIN CONNECTORS	MAX. LOAD TEMP.	MAX. LOAD PRESS.	MAX. WATERTIGHT LOAD	OUTSIDE DIA.	INS. DIA.	INS. THICK.	FLANGE FACE	COMPANION UNITS, BOLTS, NUTS AND FLANGES TO BE	REVISIONS
A1	1/2" MAIN STEAM INLET SV	1000°F	1000 PSI	1000 PSI	12.75				SEE T.C.P.L. LINE NO. 006	1.01
A2	1/2" EXHAUST	79°F	800 PSI	175°F	14.00				SEE T.C.P.L. LINE NO. 132	1.02
HR1-HR2	1/2" HOT REHEAT CONN	947°F	5200 PSI	1000 PSI	14.00				SEE T.C.P.L. LINE NO. 006	1.03
CP1-CP2	1/2" COLD REHEAT CONN	724°F	6000 PSI	1000 PSI	14.00				SEE T.C.P.L. LINE NO. 006	1.04
E1A, E1B	1/2" UNCONTROLLED EXTR	243°F	1500 PSI	271°F	16.00				SEE T.C.P.L. LINE NO. 006	1.05
E2	1/2" UNCONTROLLED EXTR	459°F	3700 PSI	467°F	12.75				SEE T.C.P.L. LINE NO. 006	1.06
E3	1/2" UNCONTROLLED EXTR	519°F	4000 PSI	605°F	10.75				SEE T.C.P.L. LINE NO. 006	1.07
E4	1/2" UNCONTROLLED EXTR	782°F	4200 PSI	789°F	8.62				SEE T.C.P.L. LINE NO. 006	1.08



SHIPPED WEIGHT	TURBINE	WT. IN LBS
	TOTAL WEIGHT OF ASSEMBLED TURBINE HEAD, EXHAUST, FRONT STANDARD ROTOR AND VALVE GEAR	274,695
	UPPER HALF OF HEAD: EXHAUST CASINGS, VALVE GEAR AND DIAPHRAGM	113,180
	FROM STRAHDARD	16,000
	ROTOR LP	23,740
	STOP VALVE	17,400
	WEIGHT STOP INTERCEPT VALVE	12,000
	EXHAUST CASINGS (L.H. OUTER)	33,000
	EXHAUST CASINGS (L.H. INNER)	10,650
	EXHAUST CASINGS (L.H. INNER)	9,875
	CROSSOVERS COMPLETE	3,000
	STEAM SEAL REG. LOAD	1,000
	BLOWDOWN VALVE LOAD	2,000
	L.P. HEAD (L.H. INNER SHELL)	9,800
	L.P. HEAD (L.H. OUTER SHELL)	11,800
	L.P. HEAD (L.H. OUTER SHELL)	34,000
	L.H. HEAD (L.H. OUTER SHELL)	38,000
	HEAD DIAPHRAGMS	20,510
	EXHAUST DIAPHRAGMS	14,500
	EXHAUST CASING (L.H. OUTER)	17,500
	GENERATOR	
	STATOR COMP. LESS OUTER END SHIELDERS	285,000
	ROTOR	70,000
	COOLERS EMPTY (4)	3,000
	COOLERS FULL (4) WITH WATER	39,500
	COLLECTOR	2,000
	STATOR COMP. WITH OUTER END SHIELDERS	314,000

DATE	BY	CHKD	APP'D

GENERAL ELECTRIC
MKT. DIV. LYNN, MASS.

OUTLINE

J 01289 7581E32

REV. B

DATE

SCALE