

TECHNICAL SPECIFICATION

FOR

NORTHSIDE GENERATING STATION
CONTINUOUS SHIP UNLOADER (CSU)
REPLACE CSU SPIRAL CHUTE

Project Manager: Tim Meyers
(904) 665-4871

Technical Lead / Engineer: Richard Stoehr
(904) 665-8628

Engineer: Jerry Kowalski

Revision: R1
Date: 5/13/2026

TABLE OF CONTENTS

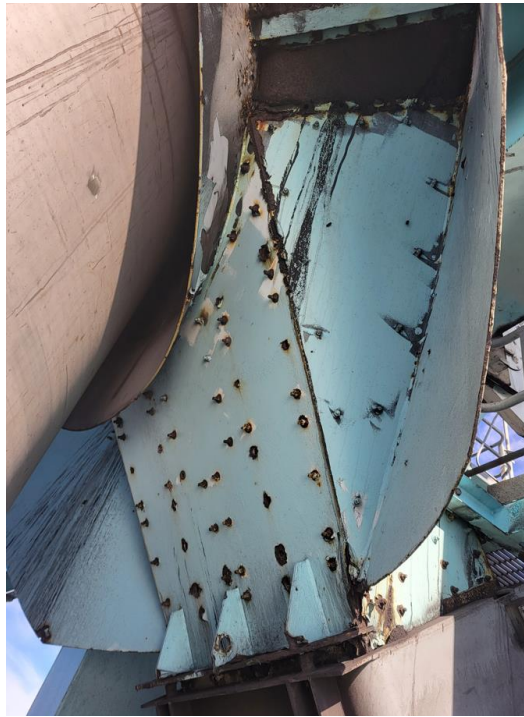
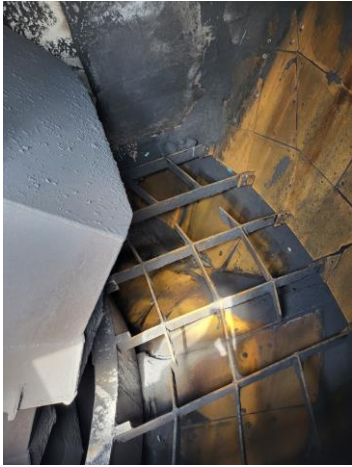
Section	Description
1.0	General
2.0	Work and Material to Be Furnished by Fabrication Vendor
3.0	Work and Material to Be Furnished by Installation Contractor
4.0	Work and Material to Be Furnished by JEA
5.0	Startup / Commissioning
6.0	Risks
7.0	Supporting Documentation

1.0 General

1.1. Basis of Request

The Continuous Ship Unloader (CSU) is a heavy-duty gear and chain system mounted on gantry rails, designed to continuously circulate buckets into fuel and limestone shipments to offload materials from ships and barges onto the Northside Generating Station (NGS) conveyor systems. The CSU has been in place for 25 years and due to the harsh operating environment (characterized by corrosive conditions, heavy loads, and the abrasive nature of the materials) CSU components are highly prone to wear and corrosion. The Spiral Chute was overhauled in 2014, and fiberglass lining was installed in 2023, but the inner and outer cylinders are original equipment and have severely degraded and require replacement to allow for continued operations. Also, the hardened chute inserts have developed cracks at the rolled edges requiring replacement and the general condition of the steel has degraded as seen below.





1.2. Scope - General Project

- 1.2.1. Although a shutdown is not required, coordination with operations and material handling is needed to complete the work while a fuel or limestone shipment is not scheduled or needed.
- 1.2.2. JEA to go out for bid and order replacement CSU Spiral Chute in FY26.
- 1.2.3. Vendor to coordinate development of spiral chute to allow for installation at location without additional disassembly of CSU.
- 1.2.4. Installation Contractor to remove old Spiral Chute and dispose of in FY27.
- 1.2.5. Installation Contractor to install new Spiral Chute and verify proper CSU operation upon completion in FY27.

1.3. Technical Requirement - General

- 1.3.1. Structural steel furnished shall be new and first quality steel. Structural steel and bolting shall be domestic material preferably.
- 1.3.2. Certified mill test reports for structural steel shall be submitted to JEA.
- 1.3.3. Manufacturer's certification stating conformity of the welding filler materials shall be submitted to JEA upon request.
- 1.3.4. Manufacturer's certification stating conformity of bolts, nuts and washers with this requisition shall be submitted to JEA upon request.
- 1.3.5. The CSU is counterweight heavy. The contractor shall supply a counterweight system of cables and weights at the cylinder end of the CSU with a total capacity of 25,798 lbs. Utilize the pad eyes under the lifting arm and behind the cylinder to connect the cable system to weights on the dock. Provide cables, pins and weight as required. The Contractor shall supply the steel pins for the 5.5" diameter pad eye holes under the holder. This cable system must be in place prior to any demolition. The method of installation of how the counterweight system is installed is at the discretion and liability of the contractor.
- 1.3.6. The drawings show an auxiliary cab opposite the boom hinge point. This cab has been removed.
- 1.3.7. Access to the dock and the CSU site is limited by land. The Contractor may have to plan on water access in the form of a barge unless another approach can be determined feasible.
- 1.3.8. JEA may have a need during the construction to bring in a self-unloading fuel boat. The Contractor shall consider this when positioning the barge crane and locating the material barge if water access is deemed necessary. JEA will provide the necessary information to the Contractor as far as ship schedule and size.
- 1.3.9. The Contractor is responsible for developing a rigging plan for the removal of the necessary components unless noted otherwise, delivery of the new components to the site from plant lay down location, and installation of the new components.
- 1.3.10. **The ultimate Construction sequence is the responsibility of the Contractor. The work must be completed in the specified time frame. A detail of removal and installation outlined in any part of this specification is a JEA suggestion. Final schedule and work plan shall be submitted to JEA two weeks after award of Contract.**

1.4. Fabrication – Scope details

- 1.4.1. Fabrication Methods shall follow the best accepted practice within the industry and shall be in accordance with the AISC "Specification for the Design, Fabrication and Erection of Structural steel for building", latest edition.
- 1.4.2. Rolled material shall be in accordance with the tolerances specified in ASTM A6. Straightening shall be done by methods that will not injure or weaken the material.
- 1.4.3. Requests in writing for any substitutions in material or member size shall be submitted to JEA representative. Approval or rejection shall be in writing.
- 1.4.4. Welding sequence and procedures shall be such as to minimize distortion and shrinkage.
- 1.4.5. The fabricator shall furnish sufficient quantity of bolts, nuts and washers for field connections.
- 1.4.6. Shop welding, welding procedures and welder and tacker certificates of qualification shall be in accordance with American Welding Society (AWS) Standard D1.1. Only certified welders shall perform the work.
- 1.4.7. Provide shop drawings to JEA for approval prior to fabrication. Shop drawings shall be in AutoCAD format.
- 1.4.8. Fabrication Methods shall follow the best accepted practice within the industry and shall be in accordance with the AISC "Specification for the Design, Fabrication and Erection of Structural steel for building", latest edition.

1.5. Surface Preparation and Coatings

- 1.5.1. The surface of the UR 2202/2205 material will not be painted. The fabrications will be left uncoated.
- 1.5.2. Any exposed steel surfaces (excluding UR 2202/2205, wear plates, and segment plates) shall be coated with a Sherwin Williams Macropoxy 646 fast cure epoxy primer 6.0 mils semi-gloss (or equivalent) and Acrolon 218HS polyurethane gloss 3.0 mils (or equivalent). Surface preparation shall be in accordance with the manufacturers' specifications. Any painted portions of the crane shall match the existing Crane Blue color via color match.

1.6. Conversion of metric sizes to US sizes

- 1.6.1. All structural steel shapes and plates shall be converted to the closest US sizes. The following is a list of some of the members. If there is a question as to the substitute size contact JEA Engineer.
 - 1.6.1.1. Plates indicated as 6mm and 8mm shall use 1/4" and 3/8" plate respectively.

2.0 Fabrication Vendor Responsibilities

- 2.1** Fabricate one (1) spiral chute assembly with outer cylinder, inner cylinder, segment plates, access doors, support seats, ladder rungs and shipping splices and conduit runs in accordance with the attached drawings CSU6-01-0301 sheets 1 and 2 and existing condition dimensions obtained by the Vendor.
- 2.2** Vendor to ensure the Spiral Chute can be assembled in the field at installation location. Design modifications will be needed, they are to be discussed and agreed upon with JEA.
- 2.3** The spiral chute inner and outer tube sections and segment support members shall be fabricated as shown on drawings 1CSU6-01-0301 sheets 1 and 2 from UR 2202 or 2205 stainless steel. The Bidder may use any source that meets the specification requirements. The inner tube drawing is not available and must be generated by the Vendor from field inspections and acquired dimensions.
- 2.4** The segment plates shall be fabricated from a through hardened steel, which is wear resistant material with hardness comparable to 40-45 HRC. They shall be rolled and bent in accordance with the attached drawings. The segments have two breaks forming a vee and in opposite directions as well as 2 radius sides. The segment plates shall be fabricated using 3/8" plate as a substitute for the 8mm indicated on the drawings. The segment plates are indicated on drawing 1CSU6-01-0301 view A-A as piece marks 5 through 11. The details for these plates are found on drawings 1CSU6-01-0306 through 0312.
- 2.5** Liner plates are to be fabricated from the same through hardened, wear resistant, steel as the segment plates or at a minimum AR400.
- 2.6** Liner plates and segments do not get painted.
- 2.7** Bolts, nuts and washers shall be 304 stainless steel.
- 2.8** The nuts used to attach the segment plates to the inner and outer spiral chute tube sections shall be welded to the tube sections after assembly in the shop.
- 2.9** The spiral chute shall be completely assembled with liner plates and photographs sent to JEA engineer and PM. The option to be inspected by JEA representative before being broken down for shipment must be given and response given in writing (email is acceptable). Piece marks and fit up marks shall be attached for Contractor assembly in the field.
- 2.10** The inner tube of the spiral chute is under and to the inside of the top ring of the cylinder. With the current design the spiral chute cannot be removed without lifting the cylinder approximately 5". This detail can be seen on drawing 1CSU6-01-0401 sheet 2 of 4, sections 2B and 2C. Modifications to original design are required in the new chute to allow installation without the need of lifting the cylinder.
- 2.11** The inside diameter of the spiral chute is less than the outside diameter of the box section on the cylinder and the bearing connecting flange.

3.0 Installation Contractor Responsibilities

- 3.1** Provide all equipment, labor and materials to remove the existing Spiral Chute.
 - 3.1.1** The Contractor shall connect any necessary counterweights prior to removal.
- 3.2** Provide equipment, labor and materials to install and assemble the new Spiral Chute provided by JEA.
- 3.3** Contractor shall perform any coating touchup required after installation/assembly.
- 3.4** Coordinate with JEA to perform necessary CSU testing and remediate any issues that arise from the installation of the new equipment.
- 3.5** Site Cleanup
 - 3.5.1** Dispose of large scrap per standard commercial practices and dispose of small debris/scrap in JEA provided dumpsters.
 - 3.5.2** Remove all construction debris from site.

4.0 JEA Responsibilities

- 4.1** Provide a project manager/coordinator to assist in the timely removal and reinstallation of the Spiral Chute.
- 4.2** Coordinate the completion of the work during a period in which fuel or limestone will not be delivered via ship or barge.
- 4.3** Separate installation, Spiral Chute supply to be sent out for bid.
- 4.4** JEA will provide(if applicable) the new Spiral Chute to Installation Contractor.
- 4.5** JEA will provide knowledge on best practices and from prior experience to accomplish installation as well as an operator to control the CSU.
- 4.6** JEA will position the CSU in its repair location on the dock and orient the foot per drawing 1CSU6-02-0001.
- 4.7** JEA will provide all necessary Lock out and Tagging of the CSU and associated equipment.

5.0 Startup and Commissioning

- 5.1** Coordinate between JEA and Installation Contractor to perform CSU testing and remediate any deficiencies that occurred from the installation of the new equipment.
- 5.2** The Contractor shall provide a final report of the install, to include, but not limited to documented weld locations, site modifications if any, any applicable QA documentation, and any noted conditions that need to be addressed by JEA.

6.0 Risks

6.1 High-Cost

- Due to instability in the market increased rates and tariffs could drastically increase the cost of the project.

6.2 Long Lead Time

- Due to instability in the market, already long lead times could increase and lead to shifts in scheduling and work completion.

6.3 Shutdown Needs

- Although a shutdown is not required, coordination with JEA operations and material handling is needed to complete the work while a fuel or limestone shipment is not scheduled or needed.

6.4 Working on Elevated Equipment

- Sections of the work must be performed at high elevations (greater 100') and care must be taken to ensure fall protection for equipment and workers.

6.5 Live Load Capacity

- Live load capacity of the CSU dock area is **250 lbs.** per square foot.

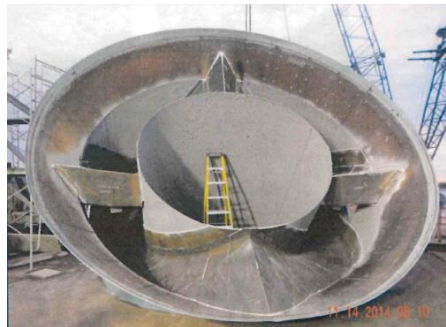
7.0 Supporting Documentation

7.1 Site Location: 4377 Heckscher Dr, Jacksonville, FL 32226

- NGS FUEL & LIMESTONE UNLOADING DOCK



7.2 Equipment Images:



7.3. Existing System (SEE SPIRAL CHUTE AVAILABLE DWG PACK 1 AND 2)

- A.** CSU GENERAL ARRANGEMENT
Drawing: 1CSU6-00-0001
JEA Control Number: 307365
- B.** CSU INSTRUCTION FOR FABRICATION & ERECTION
Drawing: 1CSU6-00-0005
JEA Control Number: 307368
- C.** CSU DISCHARGE CHUTE & CIRCULAR PLATFORM ASS'Y
Drawing: 1CSU6-01-0200
JEA Control Number: 307383
- D.** CSU SPIRAL & MOVABLE CHUTE ASS'Y
Drawing: 1CSU6-01-0300
JEA Control Number: 307396
- E.** CSU LINER ARR'G'T FOR SPIRAL CHUTE
Drawing: 1CSU6-02-0301 (1/2)
JEA Control Number: 307397
- F.** CSU LINER ARR'G'T FOR SPIRAL CHUTE
Drawing: 1CSU6-01-0301 (2/2)
JEA Control Number: 309856
- G.** CSU SEGMENT PLATE
Drawing: 1CSU6-01-0306 A JEA
Control Number: 309536
- H.** CSU SEGMENT PLATE (B)
Drawing: 1CSU6-01-0307
JEA Control Number: 309537
- I.** CSU SEGMENT PLATE (C)
Drawing: 1CSU6-01-0308
JEA Control Number: 309538
- J.** CSU SEGMENT PLATE (D)
Drawing: 1CSU6-01-0309
JEA Control Number: 309539
- K.** CSU SEGMENT PLATE (E)
Drawing: 1CSU6-01-0310
JEA Control Number: 309540
- L.** CSU SEGMENT PLATE (F)
Drawing: 1CSU6-01-0311
JEA Control Number: 309541
- M.** CSU SEGMENT PLATE (G)
Drawing: 1CSU6-01-0312
JEA Control Number: 309542
- N.** CSU CYLINDER (UPPER & MIDDLE PART) (1/4)
Drawing: 1CSU6-01-0401 (1/4)
JEA Control Number: 307398
- O.** CSU CYLINDER (UPPER & MIDDLE PART) (2/4)
Drawing: 1CSU6-01-0401 (2/4)
JEA Control Number: 307399
- P.** CSU CYLINDER (UPPER & MIDDLE PART) (3/4)
Drawing: 1CSU6-01-0401 (3/4)
JEA Control Number: 307400
- Q.** CSU CYLINDER (UPPER & MIDDLE PART) (4/4)
Drawing: 1CSU6-01-0401 (4/4)
JEA Control Number: 307401