JEA Brandy Branch Combined Cycle Units

SCR Lances and Sampling Grid

JEA PWO 31394786

October 21, 2025

Tom Cook
Electric Systems Engineer

Introduction & Background

The Brandy Branch Generating Station includes a 2x1 Combined Cycle power block that consists of two GE frame 7FA model 7341 .05 gas turbines, two Nooter-Eriksen heat recovery steam generators (HRSG), one GE D-11 steam turbine, and BOP equipment.

Units B52 & B53 combustion turbines exhaust their byproduct heat into their associated Heat Recovery Steam Generators (HRSG) for steam production for the Unit 4 steam turbine. Within the HRSG, between the HP and IP reheat sections, is a section dedicated to emissions control. Part of this section contains a Peerless Selective Catalytic Reduction (SCR) catalyst. An ammonia injection grid (AIG) is used in conjunction with the catalyst to effectively reduce NOx emissions to levels acceptable by EPA standards and permits.

This project is to upgrade both HRSG's B52 and B53, AIGs to an improved lance injection system and install a sampling grid downstream of the catalyst to facilitate tuning. Additionally, all instrumentation and valves on the AIG are to be upgraded or replaced.

A. SITE CONDITIONS

- Site location: 15701 West Beaver Street, Baldwin, FL 32234
- Equipment: Location Outdoor
- Ambient temperature range 7° to 105°F
- Site Elevation 88 feet

B. OUTAGE DATES

- 3/26/26 to 4/4/26 Tentative availability for on-site inspection, if required.
- 3/8/27 to 4/22/27 Tentative period for AIG Lances and Sampling Grid install (NOTE: SCR Catalyst due to be replaced during the same outage window. Contractor to coordinate with SCR replacement to safely perform activities alongside catalyst replacement)

C. SCOPE OF WORK

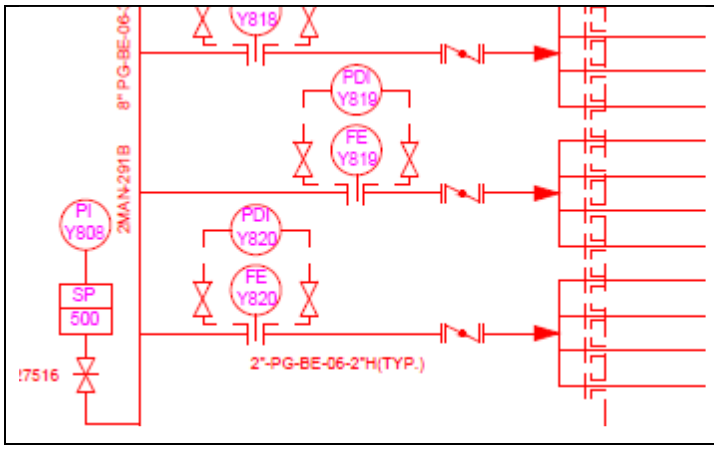
1. WORK BY CONTRACTOR

A. <u>AMMONIA INJECTION GRID</u>

1. Demolition and removal and disposal of existing AIG.
    a. Procure and turnkey-install the following:
    b. Pressure gauge near manifold inlet
    c. Orifice plate at each branch take-off
    d. High-Performance stainless steel throttling valve at each branch take-off
    e. Stainless steel isolation gate valve at each branch take-off
    f. Differential pressure indicators at each branch take-off

g. Tubing and fittings for plumbing differential pressure indicators to orifice plates

h. Lances. Currently, the injected grid lances are round. If the bidder has lances that are a performance improvement, new lances can be bid as an option.



Qty 22 headers/branches per HRSG

Scope includes replacement of:

- PDI
- Orifice
- Isolation / throttling valve

Bidders without improved lances may bid the above instrumentation and isolation valves only.

B. SAMPLING GRID

1. AIG Test Grid, 2x11 Configuration
   a. 316 SS A249 tubing
   b. Unions, connectors
   c. Tube supports – welded to SCR Catalyst support frame
   d. Labels at sample terminations

C. PROJECT COMPLETION

1. Contractor shall conduct AIG tuning and performance testing to demonstrate all guarantees are satisfied.

D. SUBMITTALS

1. One electronic copy of all documents
   a. AutoCAD and PDF all drawings
2. Two bound manuals of all documents.
   a. Operations and Maintenance Manual including start up procedures.
   b. Recommended spare parts.
   c. Written description of the tuning procedure.
   d. Written description of lance inspection & cleaning procedure.

3. Proposed schedule of values and project schedule

E. COMMON

1. Materials, drawings, engineering design
2. Certified TA and Commissioning
3. Removal, disposal, and installation by the contractor shall include the safe and proper use and mobilization of equipment or machinery such as cranes, lifting beams, spreader bars, special slings and cables, forklifts, scaffolding and welders that are needed for the work to be done.
4. Proper skilled and trained laborers and operators will be provided by the contractor.
5. The contractor must also comply with any regulations regarding safe and environmentally-sound disposal of waste materials.
6. Other contractors will be working on the units during the outage. Coordination and cooperation to not hinder any of the required work will be needed.
7. Replace any hardware damaged during construction as required.

F. MANUFACTURING REQUIREMENTS

1. All equipment supplied by the Seller shall be manufactured in one complete assembly or in sub-assemblies. All assemblies shall be designed and manufactured to enable the largest pieces possible to be shipped to the plant site.
2. All equipment shall be designed and constructed to minimize field welding. Where field welding is required, all joints shall be prepared for welding before shipment.
3. Nameplate. A permanently attached corrosion resistant nameplate shall be affixed at a prominent location near the lances shall include the following information as a minimum:
   a. Name of Manufacturer
   b. Equipment Type / Name

2. **WORK PERFORMED BY JEA**

a. Supply of limited, temporary electric power (480v 3phase and 120v) and auxiliary air if needed.

b. Lock out tag out of affected systems.

c. Limited I&C support for any instrumentation and piping that may need to be temporarily removed from units during AIG upgrade and tuning grid installation. This will be termination/de-termination of existing items. Contractor to remove/replace.

d. Identification of plant laydown area. (Approximate size of laydown requirements should be supplied by contractor)

e. G. DRAWING REFERENCES:

Catalyst Construction

Cat Support 541M006.pdf

SCR Cat 201A008.pdf

SCR Cat 541M004.pdf

SCR Assembly 201A122.pdf

SCR Spool Duct 201A120.pdf

HRSG Roof Liner Layout 201A063.pdf

Ammonia

PID Ammonia B541M0M-00002.00

PID Ammonia B541M0M-00003.00

AIG GA Lances 541M005.pdf

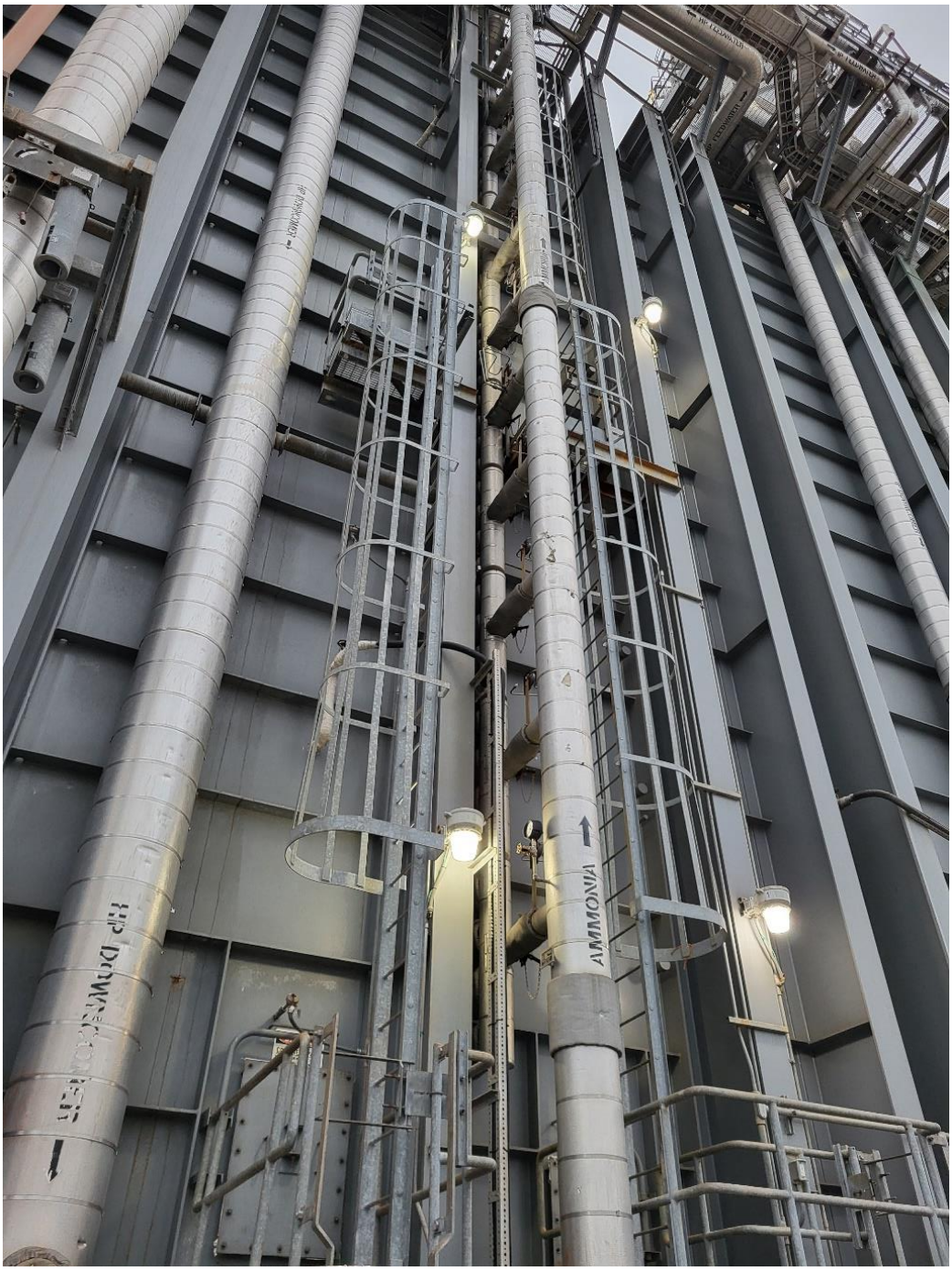
Appendix A

Lance and Sampling Grid Bid Form

Proposal Description	AMMONIA INJECTION GRID	Lance Upgrade[1] (Optional)	Sampling Grid	AIG tuning and performance testing
Scope Description	Section A1a – A1g	Section A1g	Section B	Section C
Cost, $				

Note 1: For Bids with Lance Replacements bidders are requested to provide a description and/or technical reports demonstrating the effectiveness of the improvement.


IP DOWNCOMER


AMMONIA


AMMONIA
CONFIN D SPACE