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March 11, 2013

HAND DELIVERED

Ms. Ann Cole, Director
Division of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Petition for approval of a new environmental program for cost recovery through the Environmental Cost Recovery Clause by Tampa Electric Company; FPSC Docket No. 120302-EI

Dear Ms. Cole:

Enclosed for filing in the above matter are the original and five copies of Tampa Electric Company's responses to Staff's Third Data Request (Nos. 14-16) that were contained in a February 20, 2013 letter from Mr. Charles W. Murphy to the undersigned.

Please acknowledge receipt and filing of the above by stamping the duplicate copy of this letter and returning same to this writer.

Thank you for your assistance in connection with this matter.

Sincerely,

James D. Beasley

COM
AFD
APA
ECO 3
ENG 1
GCL 1
IDM
TEL
CLK

JDB/pp
Enclosure

cc: Mr. Charles W. Murphy (w/enc.)
Mr. J. R. Kelly (w/enc.)

14. In its response to Staff's First Data Request, Number 6, TECO states, "the frequency of quarterly testing would be difficult to achieve due to the dispatching and operating demands." Please describe the difficulties associated with dispatching and operating demands.

A. As its name implies, quarterly stack testing would occur only four times annually. Therefore, during these four scheduled times, the units must be normally operating in order to get accurate test data. However, history indicates unit performance varies based on dispatch order and operating needs determined by the energy demand on the company's generation fleet.

Given this backdrop, the company elected to conduct stack testing with particulate matter continuous emissions monitoring ("PM CEMS") equipment. PM CEMS gives the company several advantages: 1) experience with present technology at Big Bend Units 3 and 4; 2) as its name implies, a continuous data collection stream to better evaluate unit performance over the gamut of operational scenarios that will occur; 3) gives a more accurate depiction of unit performance; and 4) provides a broader array of test results over a much greater period of time.

For these reasons, Tampa Electric selected the utilization of PM CEMS for emissions monitoring to determine compliance with the MATS rule.

15. In its response to Staff's First Data Request, Number 6, TECO also states, "[t]he quarterly alternative was not considered an economically feasible option due to frequency." Please provide any data relied upon by TECO to reach this conclusion.

A. The O&M costs associated with performing the quarterly testing for particulate matter ("PM") are $480,000, annually. The number is derived from conducting 12 tests per year at $40,000 per test for Big Bend Station. The utilization of PM CEMS is projected to be $72,000 per year including maintenance, repairs, and parts. In light of the $408,000 savings as well as the functional advantage of PM CEMS described in response to Staff's Third Data Request, No. 14, Tampa Electric selected PM CEMS to comply with the MATS rule.

16. Please provide a drawing (or other graphic rendering) of the Big Bend FGD systems that includes the following information: a) a before and after view of the modifications being proposed in Paragraph 11 of TECO's Petition, and b) identification of each component discussed by TECO in Paragraph 11.

A. Please see the attached PowerPoint presentation that provides drawings of Big Bend's FGD system as well as the above requested information. Additionally, Tampa Electric has attached a list of captions that describes each slide.

Big Bend Station FGD Systems

TECO TAMPA ELECTRIC

TAMPA ELECTRIC COMPANY
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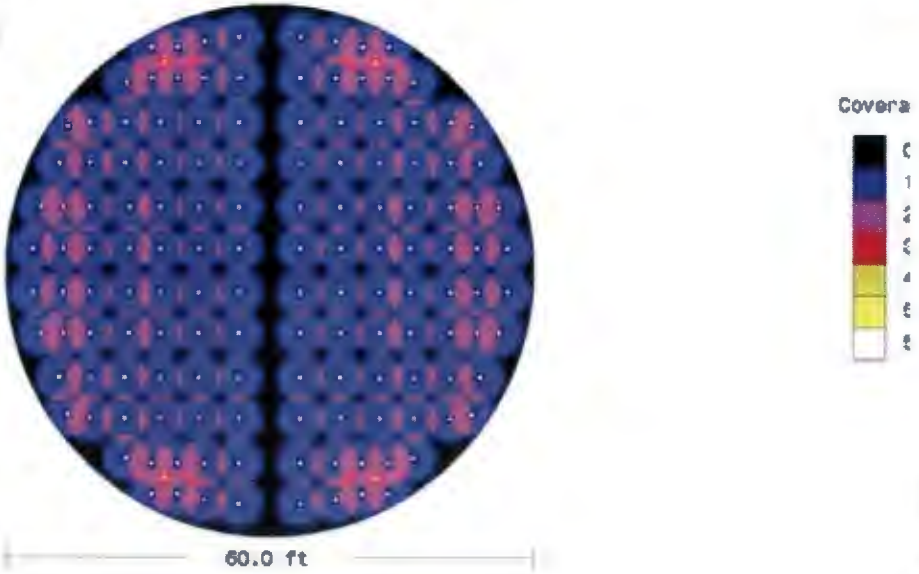
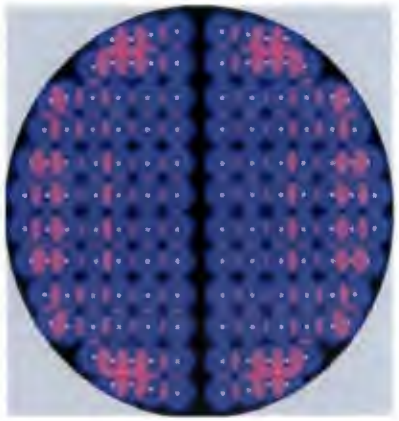
Unit 1-2 Spray Coverage is Limiting SO2 Removal

- Spray coverage at 18 inches below nozzle is critical for best removal
- Optimum is about 200%
- Current coverage is only 104%
- Nozzle map
  - Black - no slurry
  - Blue - 1 nozzle



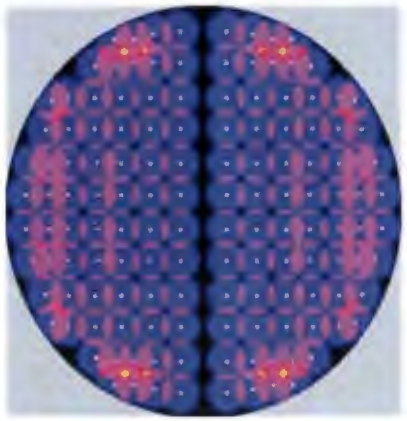
Spray Coverage 18" below nozzles

Unit1 & 2 Existing Nozzle Coverage



- 16% of area has no nozzle coverage
- 20% of area covered by two or more nozzles
- 104% total spray coverage

Coverage with Double Hollowcone Nozzle



- 10% of area has no nozzle coverage
- 35% of area covered by two or more nozzles
- 128% total spray coverage

TECO TAMPA ELECTRIC

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TwinAbsorb® Equilateral Double Outlet Spray Direction

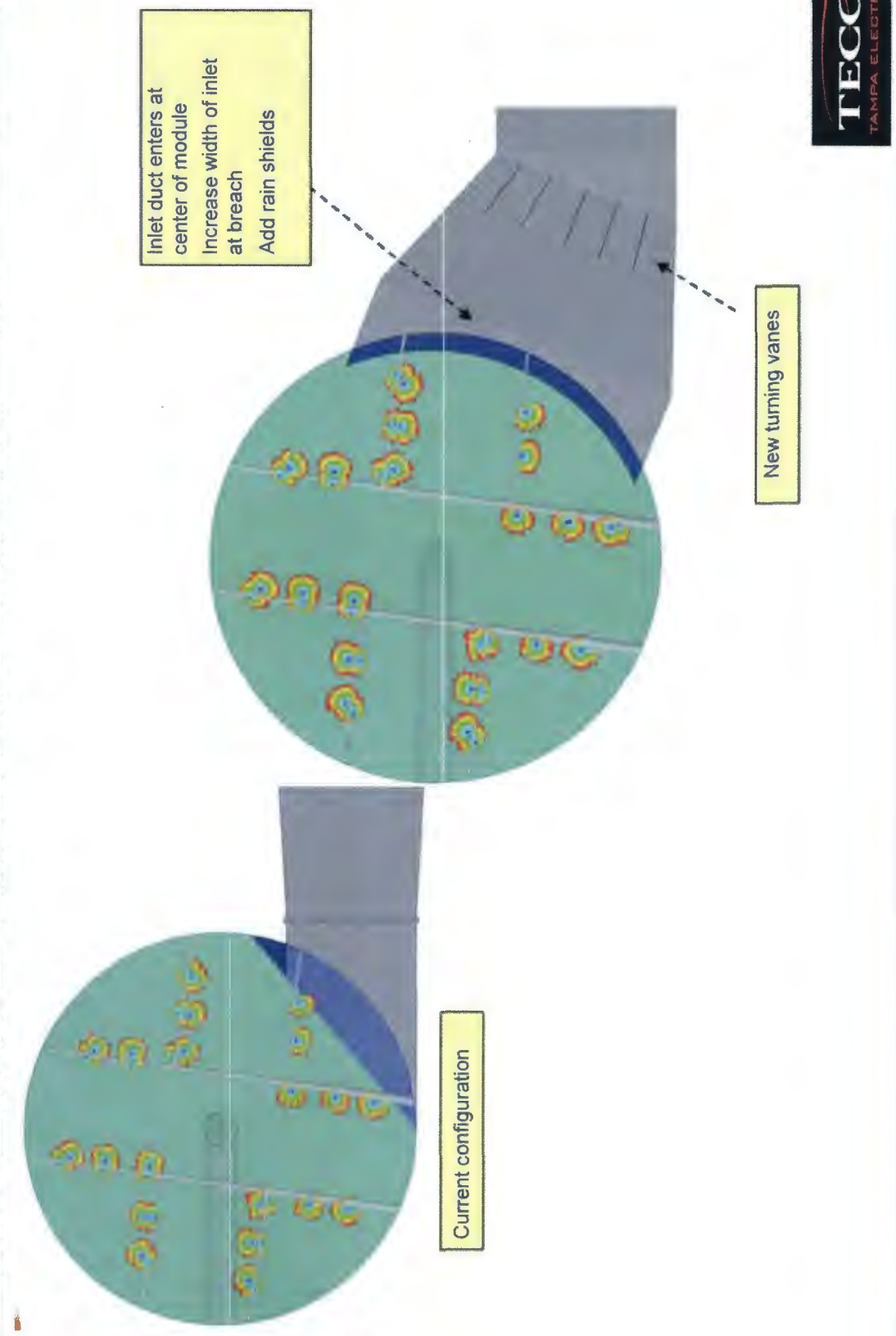
LECHLER

2X Surface Regeneration

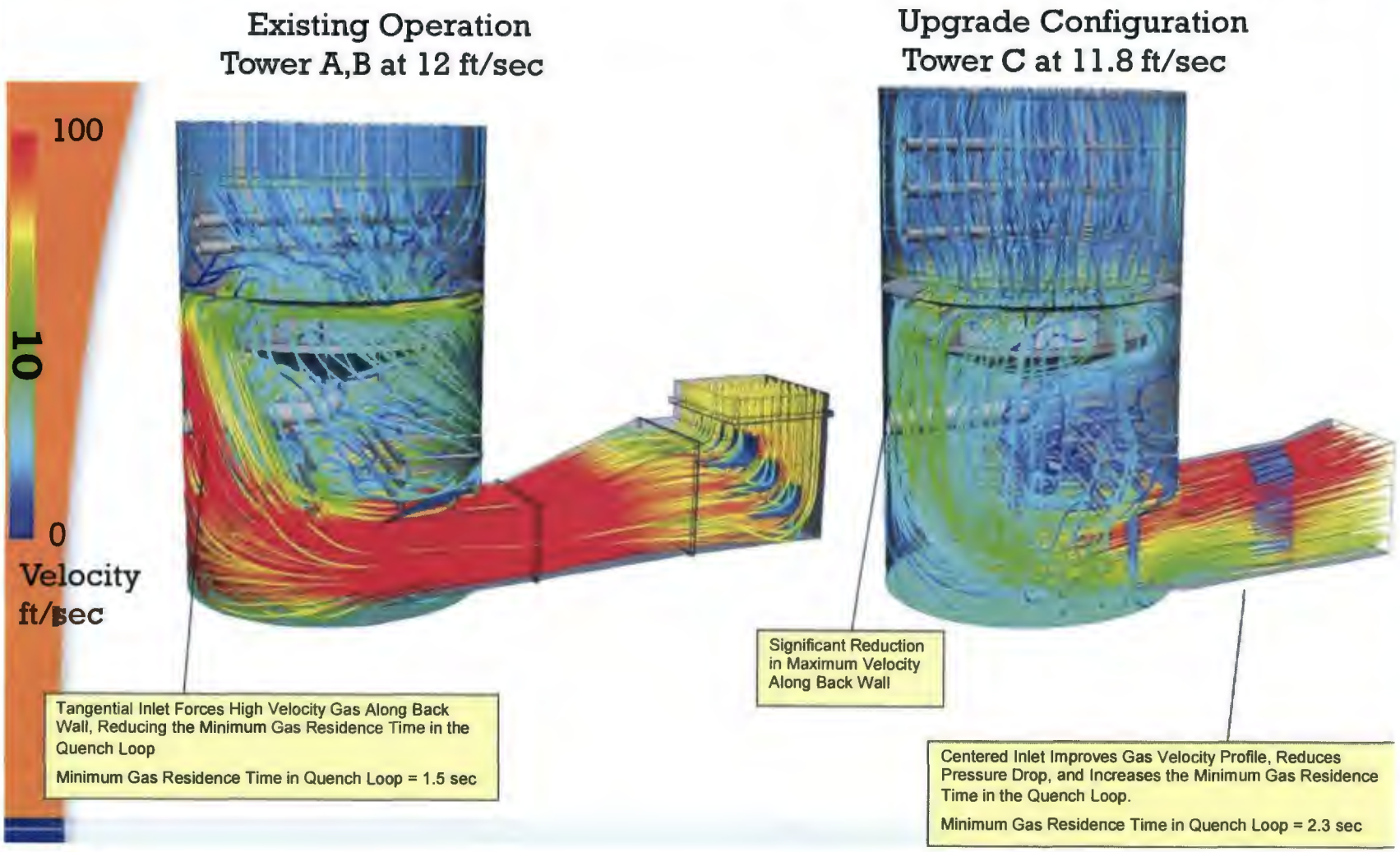
Dual Hollow Cone Nozzles - TwinAbsorb

Impingement zones create droplet surface renewal, better removal

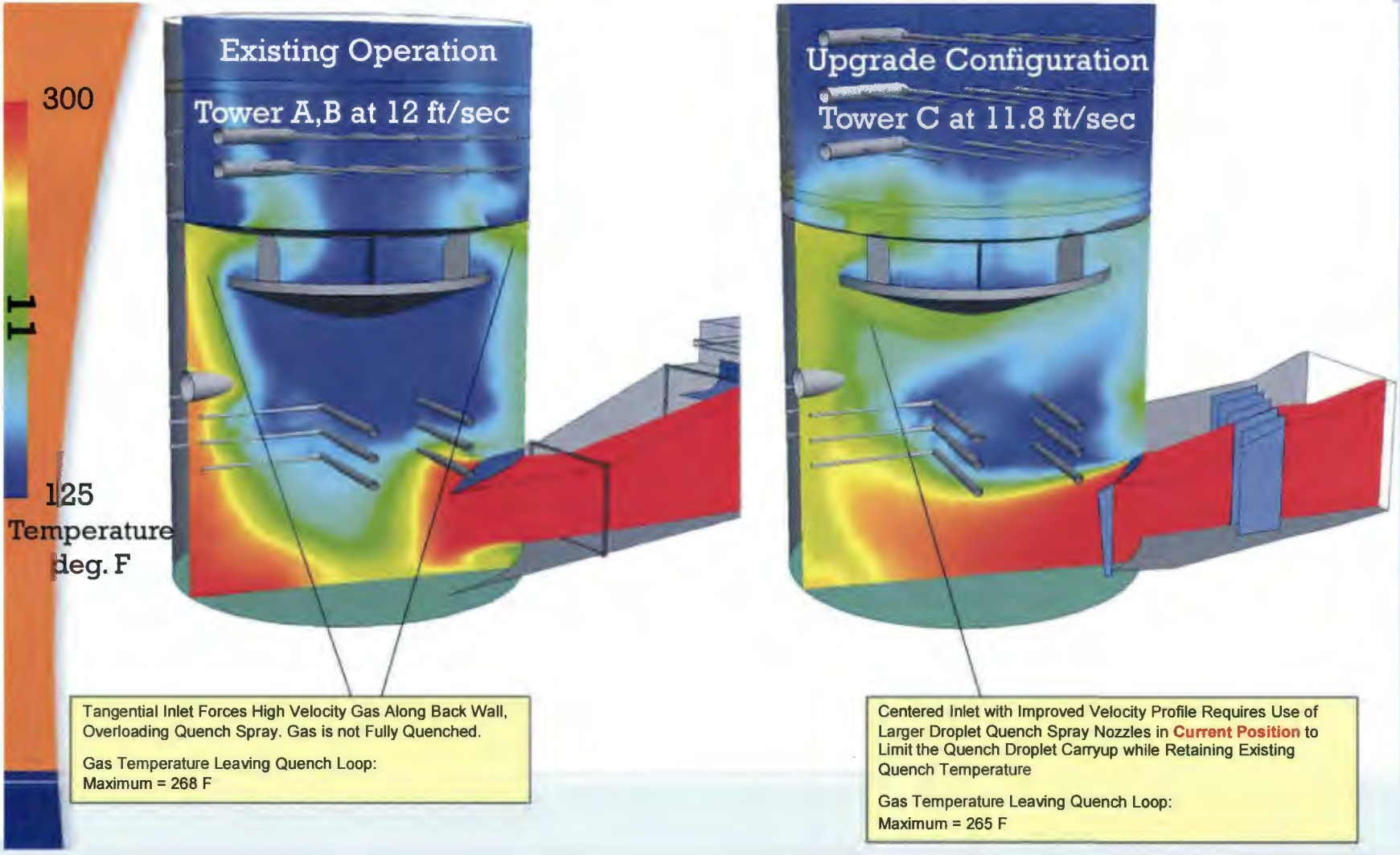
Proposed Modifications to Module C Inlet Duct



Gas Streamlines Colored by Velocity Magnitude



Gas Temperature



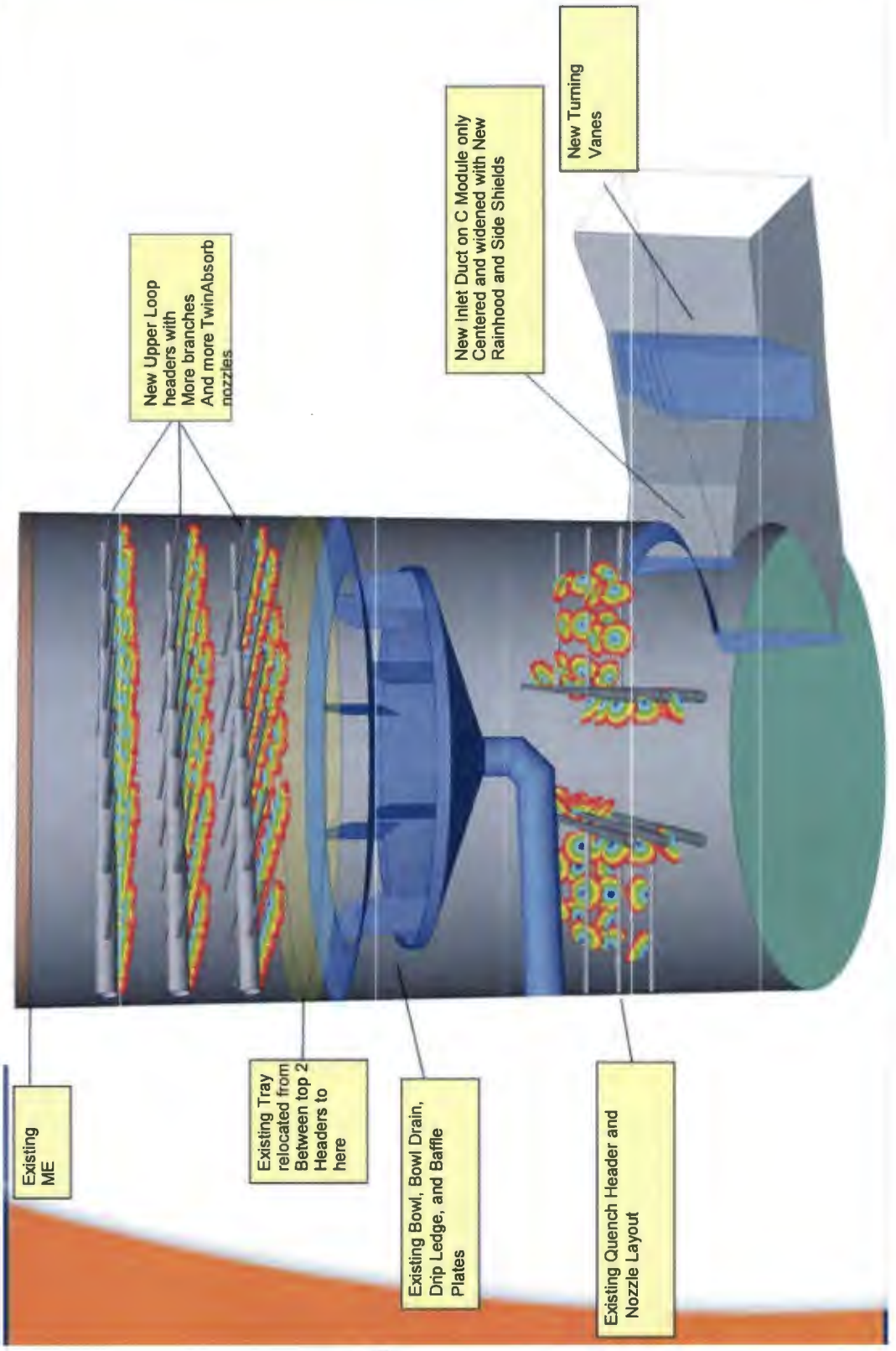
Tangential Inlet Forces High Velocity Gas Along Back Wall, Overloading Quench Spray. Gas is not Fully Quenched.

Gas Temperature Leaving Quench Loop:
Maximum = 268 F

Centered Inlet with Improved Velocity Profile Requires Use of Larger Droplet Quench Spray Nozzles in **Current Position** to Limit the Quench Droplet Carryup while Retaining Existing Quench Temperature

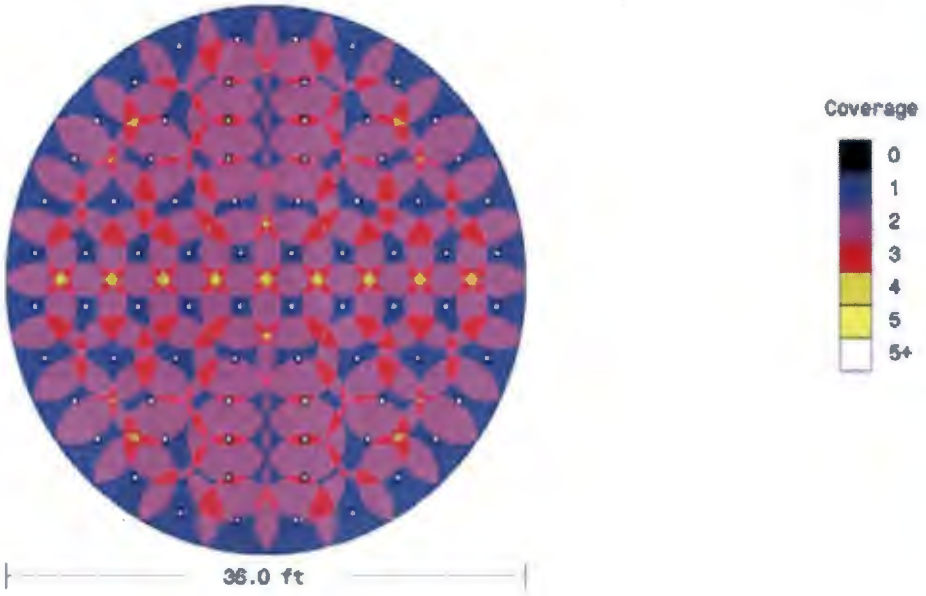
Gas Temperature Leaving Quench Loop:
Maximum = 265 F

Proposed C & D Tower Modifications

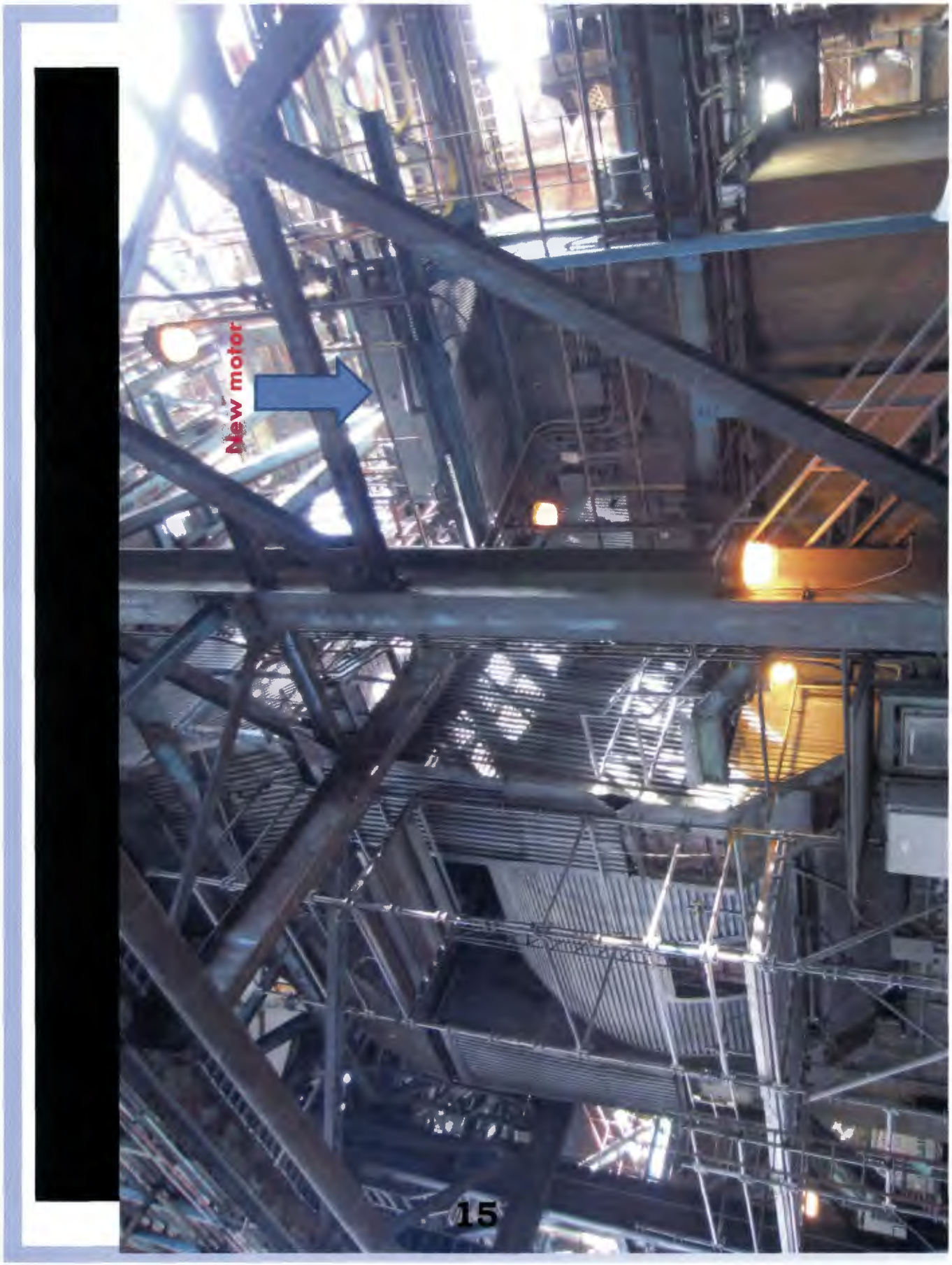


Units 3 & 4 Spray Coverage

- Replace existing headers
- 76 DHC nozzles per header
- 200% coverage 18" below nozzles
- Current spray headers give 42% coverage



[redacted]


New motor
15

Slide Captions.

1. Overall arrangement of FGD systems at Big Bend Station
2. Spray coverage map of existing nozzles in the Unit 1-2 FGD system
3. Before and after spray coverage map of Unit 1-2 FGD system
4. Photo of new proposed nozzles and their spray pattern
5. Close up photo of the new proposed spray nozzles
6. Before and after graphic of the inlet gas nozzle modification
7. Inlet gas nozzle modification showing the velocity improvement before and after
8. Inlet gas nozzle modification showing the temperature improvement before and after
9. Graphic showing the new spray header modifications and the relocation of the dual flow tray
10. Spray coverage map showing the improved coverage compared to the existing spray section
11. Photo showing the existing C booster fan
12. Photo showing what the upgraded C booster fan will look like. Notice the larger motor which will be the only externally visible difference.