



Ventura County
Air Pollution
Control District

RESPONSIBLE OFFICIAL'S CERTIFICATION FORM

Ventura County APCD Rule 33.9 requires that *“any document, including reports, schedule of compliance progress reports and compliance certifications, required by a Part 70 permit shall be certified by a responsible official.”* Therefore, this form shall be signed by the company's Responsible Official and submitted with all such reports, including, but not limited to semi-annual reports, deviation and emergency reports and any periodic reports required by a Part 70 permit. However, when submitting your Annual Compliance Certifications, please use the form titled Annual Compliance Certification Signature Cover Form.

Semi-annual reports, deviations and emergency reports and any periodic reports required by your Part 70 permit should be submitted to:

Daniel Cho
Air Quality Engineer
Ventura County Air Pollution Control District
669 County Square Drive
Ventura, CA 93003

Certification by Responsible Official

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this document is true, accurate, and complete.

Signature and Title of Responsible Official: Signature: _____ Title: <u>Dir. Western Operation, Generation</u>	Date: <u>2-3-17</u>
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Ventura County
Air Pollution
Control District

ANNUAL COMPLIANCE CERTIFICATION SIGNATURE COVER FORM

A copy of each Annual Compliance Certification shall be submitted to EPA, Region 9, at the following address:

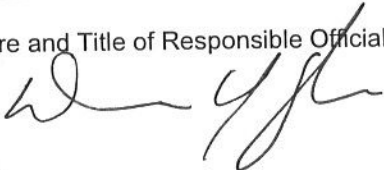
Mr. Gerardo Rios, Chief
Permits Office (AIR-3)
Office of Air Division
EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

Confidentiality

All information in a Part 70 permit compliance certification is public information. The Part 70 permit is also public information.

Certification by Responsible Official

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this compliance certification are true, accurate, and complete.

Signature and Title of Responsible Official: 	Date: 2-3-17
Title: Dir. Western Operation, Generation	

Time Period Covered by Compliance Certification 01 / 01 / 2016 (MM/DD/YY) to 12 / 31 / 2016 (MM/DD/YY)



Ventura County
Air Pollution
Control District

ANNUAL COMPLIANCE CERTIFICATION SOURCE TEST SUMMARY FORM

Period Covered by Compliance Certification: 01 / 01 / 2016 (MM/DD/YY) to 12 / 31 / 2016 (MM/DD/YY)

A. Emission Unit Description: GE LM 6000 SPRINT Gas Turbine			B. Pollutant: NOx
C. Measured Emission Rate: 2.33 ppmvd @ 15% O2 4.02 lbs/hr	D. Limited Emission Rate: 2.5 ppmvd @15% O2 40.00 lbs/hr	E. Specific Source Test or Monitoring Record Citation: 07891-T-111(a)	F. Test Date: 12/01/2016

A. Emission Unit Description: GE LM 6000 SPRINT Gas Turbine			B. Pollutant: ROC
C. Measured Emission Rate: <0.71 ppmvd @ 15% O2 <0.40 lbs/hr	D. Limited Emission Rate: 2.0 ppmvd @15% O2 1.38 lbs/hr	E. Specific Source Test or Monitoring Record Citation: 07891-T-111(b)	F. Test Date: 12/01/2016

A. Emission Unit Description: GE LM 6000 SPRINT Gas Turbine			B. Pollutant: CO
C. Measured Emission Rate: 3.22 ppmvd @ 15% O2 3.50 lbs/hr	D. Limited Emission Rate: 6.00 ppmvd @ 15% O2 8.74 lbs/hr	E. Specific Source Test or Monitoring Record Citation: 07891-T-111(c)	F. Test Date: 12/01/2016

A. Emission Unit Description: GE LM 6000 SPRINT Gas Turbine			B. Pollutant: NH3
C. Measured Emission Rate: 4.1 ppmvd @ 15% O2 2.60 lbs/hr	D. Limited Emission Rate: 5.00 ppmvd @ 15% O2 3.44 lbs/hr	E. Specific Source Test or Monitoring Record Citation: 07891-T-111(d)	F. Test Date: 12/01/2016

A. Emission Unit Description:			B. Pollutant:
C. Measured Emission Rate:	D. Limited Emission Rate:	E. Specific Source Test or Monitoring Record Citation:	F. Test Date:



ANNUAL COMPLIANCE CERTIFICATION PERMIT ATTACHMENT FORM

Period Covered by Compliance Certification: 01 / 01 / 2016 (MM/DD/YY) to 12 / 31 / 2016 (MM/DD/YY)

<p>A. Attachment # or Permit Condition #: 7891-T1 Condition # 1-5</p>	<p>D. Frequency of monitoring: Annual Source Test and Continuous Emissions Monitoring</p>
<p>B. Description: Gas Turbine Emissions Limits: - NOx) emissions shall not exceed 2.5 ppmvd @ 15% O2 - ROG emissions shall not exceed 2.0 ppmvd @ 15% O2 - CO emissions shall not exceed 6.0 ppmvd @ 15% O2 - NH3 emissions shall not exceed 5.0 ppmvd @ 15% O2</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable Source test summary form is attached</p>
<p>C. Method of monitoring: Continuous Emissions Monitoring; Annual source test performed on 12/01/2016</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>

<p>A. Attachment # or Permit Condition #: 7891-T1 Conditions # 6-12</p>	<p>D. Frequency of monitoring: Continuous</p>
<p>B. Description: Continuous Emissions Monitor - Permittee shall: - Install, Operate & Maintain and Calibrate CEMS pursuant to Rule 74.23; Rule 103, NSPS KKKK and 40 CFR 75. - To maintain permanent CEMS records; - To maintain records of all maintenance activities.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>C. Method of monitoring: Attachment #1 is the CEMS emissions and fuel usage records. Attachment 2 is the CEMS maintenance records. Attachment 3 is the CEMS calibration records. Attachment 4 is the SCR and CO catalysts temperature and pressure device calibration records.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>

<p>A. Attachment # or Permit Condition #: 7891-T1 Conditions # 13</p>	<p>D. Frequency of monitoring: Continuous monitoring</p>
<p>B. Description: To provide operating records pursuant to Rule 74.23.E - Actual fuel consumption or operating hour records for the past 12 months; - To provide annual source test and control system operating parameter</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable NA</p>
<p>C. Method of monitoring: An in-line fuel flow meter is used to monitor actual fuel consumption. Attachment #1 is rolling twelve months total gas consumption. Compliance source test was performed on 10/28/2015, results of the test has been submitted to the District.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>



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<p>A. Attachment # or Permit Condition #: 7891-T2 Conditions 1-2</p>	<p>D. Frequency of monitoring:</p>
<p>B. Description: 40 CFR 60 KKKK: SO2 emissions shall not exceed 09.lbs/MW-hr or total sulfur in fuel shall not exceed 0.06 lbs/MMBTU heat input</p>	<p>N/A</p>
<p>C. Method of monitoring: Only PUC quality gas supplied by SO CAL GAS is combusted in the Turbine, facility is in compliance Rule 64 and 40 CFR 60 Sub-part KKKK pursuant to 7891-T2 condition #2.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
	<p>F. Currently in Compliance? (Y or N): <u>Y</u></p> <p>G. Compliance Status? (C or I): <u>C</u></p> <p>H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u></p> <p>*If yes, attach Deviation Summary Form</p>

<p>A. Attachment # or Permit Condition #: 7891 - T2 Conditions #3</p>	<p>D. Frequency of monitoring:</p>
<p>B. Description: Pursuant to Rule 54.B.1, no person shall discharge sulfur compounds calculated as SO2 in excess of (a) 300 ppmv at point of discharge; (b) 0.25 ppmv, 1 hr av and or 0.04 ppmv, 24 hr av at ground or sea level.</p>	<p>N/A</p>
<p>C. Method of monitoring: Combustion of PUC quality natural gas ensures compliance with this requirement. No additional monitoring was required pursuant to 7891-T2 condition #3.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
	<p>F. Currently in Compliance? (Y or N): <u>Y</u></p> <p>G. Compliance Status? (C or I): <u>C</u></p> <p>H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u></p> <p>*If yes, attach Deviation Summary Form</p>

<p>A. Attachment # or Permit Condition #: 07891-Engine-111 Condition #1</p>	<p>D. Frequency of monitoring:</p>
<p>B. Description: The 924 BHP Waukesha engine shall be certified to meet Federal Tier 2 standard. Permittee shall maintain documentation certifying engine meets this standard.</p>	<p>Continuous</p>
<p>C. Method of monitoring: The engine on site is a Waukesha, Model L36GLD, driving a Kohler generator. The engine was manufactured 2003 - 2005. Attachment 5 is the generator and engine spec sheet</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable NA</p>
	<p>F. Currently in Compliance? (Y or N): <u>Y</u></p> <p>G. Compliance Status? (C or I): <u>C</u></p> <p>H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u></p> <p>*If yes, attach Deviation Summary Form</p>



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Period Covered by Compliance Certification: 01 / 01 / 2016 (MM/DD/YY) to 12 / 31 / 2016 (MM/DD/YY)

<p>A. Attachment # or Permit Condition #: 7891 - Engine-111 Conditions 2 & 7</p> <p>B. Description: - Engine shall be used only when electrical power fails, except for testing and maintenance; - Engine shall not be operated for more than 200 hours per calendar year; - Engine record keeping requirement</p> <p>C. Method of monitoring: Attachment 6: Engine operating log is used to document all engine operations including emergency use hours and testing/maintenance use hours.</p>	<p>D. Frequency of monitoring: Monthly</p> <p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p> <p>F. Currently in Compliance? (Y or N): <u>Y</u></p> <p>G. Compliance Status? (C or I): <u>C</u></p> <p>H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>
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<p>A. Attachment # or Permit Condition #: 7891 - Engine Conds. # 3, 4, 5, 6 & 7.</p> <p>B. Description: - Engine shall not operate more than 200 hrs/yr; - Engine shall be equipped with a non re-settable time meter; - Annual compliance certification shall include engine mgf , model number, operator ID and location. - Total engine hour shall be reported annually.</p> <p>C. Method of monitoring: Engine operating log is used to document all engine operations including emergency use hours and testing/maintenance use hours. (Attachment #6, engine operating log indicated manufacturer, model number, operator ID and location of use).</p>	<p>D. Frequency of monitoring: N/A</p> <p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p> <p>F. Currently in Compliance? (Y or N): <u>Y</u></p> <p>G. Compliance Status? (C or I): <u>C</u></p> <p>H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>
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<p>A. Attachment # or Permit Condition #: 07891PC1 - Condition 1</p> <p>B. Description: Annual natural gas limit for turbine operation shall not exceed 1,667 MMSCF/yr.</p> <p>C. Method of monitoring: An in-line fuel flow meter that is calibrated annually is used to monitor natural gas combusted in the turbine. Attachment #1 showed a rolling 12 months natural gas combusted for turbine operation.</p>	<p>D. Frequency of monitoring: Continuous monitoring</p> <p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable NA</p> <p>F. Currently in Compliance? (Y or N): <u>Y</u></p> <p>G. Compliance Status? (C or I): <u>C</u></p> <p>H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>
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<p>A. Attachment # or Permit Condition #: PO7891PC1 - Condition 2</p>	<p>D. Frequency of monitoring: Continuous Emissions Monitor</p>
<p>B. Description: Turbine annual NOx emissions shall not exceed 4.81 tons/yr. Facility annual NOx emissions shall not exceed 4.99 tons/yr. A rolling 12 months record shall be maintained</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>C. Method of monitoring: Continuous Emissions Monitoring, Attachment #1 is the rolling 12 months NOx emissions for the entire 2016. The record indicated 3613 pounds of NOx was emitted from the gas turbine in 2016</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> <small>*If yes, attach Deviation Summary Form</small></p>

<p>A. Attachment # or Permit Condition #: PO7891PC1 - Condition 3</p>	<p>D. Frequency of monitoring: N/A</p>
<p>B. Description: The 924 BHP Waukesha natural gas engine shall not be used for more than 200 hours per year.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>C. Method of monitoring: A totalizing hour meter is used to monitor engine operated hours. All engine operation is documented in an operation log. Attachment #6, engine operating log that showed total run of the engine in 2016 was less than 200 hours.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> <small>*If yes, attach Deviation Summary Form</small></p>

<p>A. Attachment # or Permit Condition #: PO7891PC1 - Condition 4</p>	<p>D. Frequency of monitoring: N/A</p>
<p>B. Description: The LM-6000 SPRINT GTG and the 924 BHP Waukesha engine shall be fired on PUC regulated natural gas</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>C. Method of monitoring: Southern California Gas Company - a PUC regulated utility company supplies natural gas to McGrath Generating Station.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> <small>*If yes, attach Deviation Summary Form</small></p>



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<p>A. Attachment # or Permit Condition #: PO7891PC1 - Condition 5</p>	<p>D. Frequency of monitoring:</p>
<p>B. Description: The 10,500 gallon ammonia storage tank shall be equipped with a pressure vacuum relief valve set at 50 psig and shall be vented to to the vessel from which it is being filled during all filling operations.</p>	<p>N/A</p>
<p>C. Method of monitoring: -Visual observation during filling to verify the tank is vented to the filling vessel. -Attachment #7 is the pressure vacuum relief valve calibration sheet.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>F. Currently in Compliance? (Y or N): <u>Y</u></p> <p>G. Compliance Status? (C or I): <u>C</u></p> <p>H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>	

<p>A. Attachment # or Permit Condition #: Rule "50" Opacity</p>	<p>D. Frequency of monitoring:</p>
<p>B. Description: Rule 50 - Opacity: No visible emissions shall remain visible for a period or periods greater than 3 minutes in any hour.</p>	<p>Routine Surveillance</p>
<p>C. Method of monitoring: Annual certification indicating all equipment at the facility are complying with all applicable sections of Rule 50. Attachment #8 is a copy of the 2016 opacity survey of the gas turbine and the black-start generator engine.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable EPA Method 9</p>
<p>F. Currently in Compliance? (Y or N): <u>Y</u></p> <p>G. Compliance Status? (C or I): <u>C</u></p> <p>H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>	

<p>A. Attachment # or Permit Condition #: PO7891PC1 - Condition 6</p>	<p>D. Frequency of monitoring:</p>
<p>B. Description: Exempt Solvents, coatings, adhesives and lubricants.</p>	<p>N/A</p>
<p>C. Method of monitoring: A list of all solvent and coating used at the facility is maintained. Attachment #9 is the solvent usage record for 2016.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>F. Currently in Compliance? (Y or N): <u>Y</u></p> <p>G. Compliance Status? (C or I): <u>C</u></p> <p>H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>	



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<p>A. Attachment # or Permit Condition #: Rules 54B1 & 54.B.2</p>	<p>D. Frequency of monitoring: N/A</p>
<p>B. Description: - Stationary IC engine & gas turbine operators shall not discharge sulfur compounds in excess of 300 ppm by vol (SO₂) at 15% O₂. - Sulfur concentration at ground level or at any point at or beyond property line shall not exceed 0.25 ppmv 1hr av or 0.04 ppmv 24hr av.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable</p>
<p>C. Method of monitoring: - PUC quality gas is combusted at the facility in compliance with Rule 64 and by extension Rule 54B1; - Sulfur concentration at point of discharge and ground level concentration of SO₂ shall be monitored upon District's request.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>

<p>A. Attachment # or Permit Condition #: Rule 55 - Fugitive Dust</p>	<p>D. Frequency of monitoring: Routine Surveillance</p>
<p>B. Description: Fugitive dust emissions resulting from any operation, disturbed surface area or man made conditions shall not be visible beyond the midpoint of an adjacent street. Opacity shall be less than 20 percent and track out shall be less than 25 feet.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>C. Method of monitoring: On site operations monitoring. All applicable sources of dust at the facility are operating in compliance with Rule 55. There was no disturbed surface areas, or man-made conditions at the facility subject to Rule 55 in 2015.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>

<p>A. Attachment # or Permit Condition #: 57.1</p>	<p>D. Frequency of monitoring: N/A</p>
<p>B. Description: Particulate Matter emission from fuel burning equipment shall not exceed 0.12 lbs per million BTU.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable</p>
<p>C. Method of monitoring: - Per District Analysis dated Dec. 3rd, 1997. Gas Turbine emissions factors was determined to be 0.0419 lb/MMBTU, less than 0.12 lbs/MMBTU limit specified in Rule 57.1 - PM source test will be conducted upon request by the District.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>



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<p>A. Attachment # or Permit Condition #: 64.B.1</p>	<p>D. Frequency of monitoring: N/A</p>
<p>B. Description: Sulfur content of Fuels: No person shall burn gaseous fuel containing 50 grains sulfur compounds per 100 CF fuel. Section 2 of the rule provides exemption from requirements of Rule 64.B.1 if only PUC-regulated natural gas is combusted.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable No test is required is PUC quality gas is combusted</p>
<p>C. Method of monitoring: Southern California Gas Company - a PUC regulated utility company supplies natural gas to McGrath Generating Station.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>

<p>A. Attachment # or Permit Condition #: 74.6</p>	<p>D. Frequency of monitoring: Maintenance of solvent usage records and routine surveillance of cleaning operations.</p>
<p>B. Description: Surface Cleaning and De-greasing</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>C. Method of monitoring: A log is used to document surface cleaning and de-greasing activity at the site. Attachment 9, solvent usage record.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>

<p>A. Attachment # or Permit Condition #: 74.1 1-7</p>	<p>D. Frequency of monitoring: N/A</p>
<p>B. Description: Abrasive Blasting Operations</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>C. Method of monitoring: Abrasive blasting operation was not carried out in the facility in 2016</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>



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<p>A. Attachment # or Permit Condition #: 74.2 1-6</p>	<p>D. Frequency of monitoring: Routine monitoring of operation</p>
<p>B. Description: Architectural coating operations - To maintain VOC emissions records of coating usage.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>C. Method of monitoring: All coating and solvent used in the facility complied with the VOC requirement of this rule. Attachment 9 is the VOC emissions record of coating usage.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u></p> <p>G. Compliance Status? (C or I): <u>C</u></p> <p>H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u></p> <p><small>*If yes, attach Deviation Summary Form</small></p>

<p>A. Attachment # or Permit Condition #: 74.4 1-2</p>	<p>D. Frequency of monitoring: N/A</p>
<p>B. Description: Cut back Asphalt: To test ROC content of road oils being proposed for use. Road oil shall not contain > 0.5% ROC with boiling point <500F.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>C. Method of monitoring: Cut back asphalt was not used on site during the review period.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u></p> <p>G. Compliance Status? (C or I): <u>C</u></p> <p>H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u></p> <p><small>*If yes, attach Deviation Summary Form</small></p>

<p>A. Attachment # or Permit Condition #: 40 CFR 61M</p>	<p>D. Frequency of monitoring: N/A</p>
<p>B. Description: National Standard for Asbestos: Asbestos demolition or renovation activities</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>C. Method of monitoring: Asbestos demolition or renovation operations were not performed in the facility during the period under review.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u></p> <p>G. Compliance Status? (C or I): <u>C</u></p> <p>H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u></p> <p><small>*If yes, attach Deviation Summary Form</small></p>



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Period Covered by Compliance Certification: 01 / 01 / 2016 (MM/DD/YY) to 12 / 31 / 2016 (MM/DD/YY)

<p>A. Attachment # or Permit Condition #: 74.11.1</p>	<p>D. Frequency of monitoring: N/A</p>
<p>B. Description: Large Water Heaters and Small boilers: To maintain identification records of large water heaters and small boilers.</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>C. Method of monitoring: Large water heaters, or small boilers are not installed in the facility.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>

<p>A. Attachment # or Permit Condition #: 74.22</p>	<p>D. Frequency of monitoring: N/A</p>
<p>B. Description: Natural Gas Fired Fan Type Central Furnace: To maintain furnace identification records</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable N/A</p>
<p>C. Method of monitoring: Natural gas fired furnace is not installed in the facility.</p>	<p>F. Currently in Compliance? (Y or N): <u>Y</u> G. Compliance Status? (C or I): <u>C</u> H. *Excursions, exceedances, or other non-compliance? (Y or N): <u>N</u> *If yes, attach Deviation Summary Form</p>

<p>A. Attachment # or Permit Condition #:</p>	<p>D. Frequency of monitoring:</p>
<p>B. Description:</p>	<p>E. Source test reference method, if applicable. Attach Source Test Summary Form, if applicable</p>
<p>C. Method of monitoring:</p>	<p>F. Currently in Compliance? (Y or N): _____ G. Compliance Status? (C or I): _____ H. *Excursions, exceedances, or other non-compliance? (Y or N): _____ *If yes, attach Deviation Summary Form</p>

Attachment 1

Emissions and fuel usage record

Babcock & Wilcox Power Generation Group NetDAHS®

Monthly Emissions - Averages & Totals Report
 Southern California Edison - McGrath Peaker Generating Station
 251 N. Harbor Blvd., Oxnard, Ca 93035
 Report Period 1/1/2016 00:00 to 12/31/2016 23:59
 Generated: 2/3/2017

Source: Simple Cycle Combustion Turbine
 Permit ID.: 07891

Month	Process On (Hours/mo)	NOx (lbs/mo)	CO (lbs/mo)	PM10 (lbs/mo)	ROC (lbs/mo)	SOX (lbs/mo)	Fuel Usage (MMcft/mo)	Gross MW (MW.Hrs/mo)
Jan 2016	114.45	635.51	621.94	530	136	30	50.192	5368.4
Feb 2016	108.93	594.25	599.96	491	126	28	46.515	4933.9
Mar 2016	53.38	299.42	285.97	244	62	14	23.102	2453.9
Apr 2016	17.73	87.94	100.16	81	21	5	7.660	829.6
May 2016	2.83	14.97	15.84	13	3	1	1.225	132.1
Jun 2016	1.17	11.87	7.39	5	1	0	0.448	46.4
Jul 2016	43.73	187.78	215.12	199	51	11	18.809	2043.7
Aug 2016	32.77	148.05	172.15	148	38	8	14.030	1518.6
Sep 2016	42.92	192.27	196.79	196	50	11	18.568	2000.9
Oct 2016	116.48	561.81	601.62	533	136	30	50.488	5416.3
Nov 2016	80.62	426.64	346.95	366	93	21	34.616	3734.7
Dec 2016	78.33	452.63	373.08	359	92	20	33.982	3669.5
2016 Total	693.34	3613.14	3536.97	3165.00	809.00	179.00	299.63	32148.00

Attachment 2

CEMS maintenance records

Barnes/Centocor/Grath/Williams/Thomas/Grath/Peaker Generating Station
 Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Unit Number ID	Value/Status											
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Parameters to Check			1/21/16	2/14/16	3/14/16	4/12/16	5/12/16	6/11/16	7/11/16	8/11/16	9/11/16	10/11/16	11/11/16	12/11/16
MONTHLY QA/QC INSPECTIONS			5	5	5	5	5	5	5	5	5	5	5	5
Sample System Checks			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Check NOx analyzer desiccant media. Replace as necessary.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Check filter on shelter HVAC system. Clean or replace as needed.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Plan ahead for the upcoming linearity/CGA. Check CGA linearity gas bottle pressures > 500 psig. Also check expiration dates.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Order new gas bottles as needed keeping in mind the lead time may be several weeks.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Check incoming instrument air filter.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Perform diagnostic checks on the following parameters:														
NOx Analyzer														
Motherboard - Voltages - Check status and ensure normal operation.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Interface Board - Voltages - Check status and ensure normal operation.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
I/O Board - Voltages - Check status and ensure normal operation.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperatures:			34.4	34.7	34.9	35.2	34.6	33.9	34.7	35.0	35.0	35.1	35.0	34.4
Internal Chamber			50.2	50.1	50.2	50.0	50.2	49.9	50.3	50.2	50.0	50.9	50.0	49.9
Cooler			-2.6	-2.8	-3.1	-2.9	-3.1	-2.9	-2.9	-2.9	-2.6	-2.9	-2.8	-2.9
NO2 Converter			626.9	623.7	622.7	622.2	621.9	623.3	623.3	623.3	622.4	622.2	626.6	625.8
Other:														
Chamber Pressure			164.5	167.3	167.9	168.5	167.0	167.9	167.3	163.0	163.6	163.0	164.5	164.8
Ozonator Flow			OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Alarms Detected			NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
NOx/INH3 Analyzer														
Motherboard - Voltages - Check status and ensure normal operation.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Interface Board - Voltages - Check status and ensure normal operation.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
I/O Board - Voltages - Check status and ensure normal operation.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperatures:			32.2	32.8	33.0	34.7	33.5	33.3	33.1	34.5	34.5	34.6	34.7	32.9
Internal Chamber			50.3	50.3	50.2	49.9	50.1	49.9	50.2	50.3	50.2	49.9	49.9	49.9
Cooler			-2.7	-2.1	-2.1	-2.2	-2.9	-3.1	-2.9	-3.0	-2.8	-2.5	-2.6	-3.1
NO2 Converter			623.5	623.3	625.3	622.7	625.8	622.4	622.7	622.4	622.7	626.1	622.4	623.3
Other:														
Chamber Pressure			170.0	168.8	169.7	170.3	170.0	170.3	170.0	169.4	170.0	170.3	170.9	171.5
Ozonator Flow			OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Alarms Detected			NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
CO Analyzer														
Motherboard - Voltages - Check status and ensure normal operation.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Interface Board - Voltages - Check status and ensure normal operation.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
I/O Board - Voltages - Check status and ensure normal operation.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperatures:			32.9	33.3	33.0	35.1	34.2	34.3	34.9	35.3	35.1	34.9	35.6	34.8
Internal Chamber			47.8	48.0	47.9	44.0	43.4	43.5	43.2	43.4	43.4	43.5	43.6	43.6
Other:														
Analyzer Pressure			747.3	747.5	745.2	748.5	740.8	749.7	748.2	745.8	747.3	745.8	750.3	751.5
Sample Flow Rate			1.001	1.005	1.008	0.974	0.968	0.967	0.963	0.960	0.957	0.958	0.958	0.955
Sample Ratio			1.497620	1.497380	1.498200	1.510400	1.513000	1.512600	1.512700	1.513300	1.511000	1.493900	1.500100	1.497100
AGC Intensity			198555	197835	197435	193718	193981	197879	198914	200761	199574	197160	197665	198174
Motor Speed			100	100	100	100	100	100	100	100	100	100	100	100
Alarms Detected			NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Mark as either Acceptable "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.
 Form emailed to: _____ Date: _____

Barre/Center/Grapeland/Mira Loma/McGrath Peaker Generating Station
 Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Parameters to Check		First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Parameters to Check		3/11/2016	6/16/2016	9/16/2016	12/14/16
Sample System Checks	Inspect sample gas pressure. If sample gas pressure shows a decline, perform one or more of the following: Perform probe maintenance. Replace the filter element and clean the filter chamber as necessary. Verify if probe box heater is operating, if flow is low, check sample pump.	✓	✓	✓	✓
	Perform CEMS sample system leak check as necessary.	✓	✓	✓	✓
	Perform general housekeeping duties inside shelter/cabinet. Dust/clean all equipment surfaces.	✓	✓	✓	✓
Analyzer Checks					
	For all analyzers: Visually check for obvious defects such as loose connectors, loose fittings, cracked or clogged Teflon lines, and excessive dust or dirt accumulation. Dirt accumulation inside the instruments can cause overheating or component failure and may provide conducting paths for electricity. Clean the inside of each instrument by vacuuming accessible areas and then using compressed air to blow out remaining dirt. Clean all analyzer cooling fans. Caution: Observe all safety warnings from manufacturers' manuals. accumulation, signs of overheating, loose wires, and other anomalies.	✓	✓	✓	✓
REMARKS:					

Mark as either **Acceptable**, **Corrective action Required "X"**, or **Actual Readings, where required**
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log
 Form emailed to: _____ Date: _____

Barre/Center/Grapeland/Mira Loma/McGrath
 Peaker Generating Station
 Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Parameters to Check	Tag ID	Value/Status
3/20/16	M.H.G.	Annual QA/QC INSPECTIONS		
		TEI 42-LS NO _x Analyzer		
		Clean the lens in the reaction chamber, as needed.		✓
		Perform a NO _x converter check. Replace the converter as necessary.		✓
		Inspect and clean cooler fins on PMT cooler.		✓
		Inspect and clean fan filters.		✓
		Check sample pump A- Replace diaphragm and disk as needed.		✓ New
		Check sample pump B- Replace diaphragm and disk as needed.		✓ New
		Replace capillaries and O-rings.		✓
		Servomex 1440D C ₂		✓ New
		Check filter element at Flow Control Device, replace as needed.		✓
		Check for leaks.		✓
		TEI MODEL 481 CO Analyzer		
		Replace IR source (as needed).		✓ New
		Clean correlation wheel, optics, and measuring cell, as necessary.		✓ New
		Check for leaks around fittings.		✓
		Check pump diaphragm and replace as necessary.		✓ New Pump
		Replace capillary.		✓
		Clean fan filter.		✓
		Sample System Checks		
		Check Peristaltic Pump A tubing - Replace as necessary.		✓ New
		Check Peristaltic Pump B tubing - Replace as necessary.		✓ New
		Perform probe maintenance. Inspect filter and O-rings and replace as necessary.		✓
		Adjust 4-20 mA outputs (analog) to match LED display for all analyzers.		✓
		Replace ammonia scrubber media. <i>See replaced scrubber media M.6.</i>		✓
		Replace Peristaltic pump diaphragm. <i>See lines 142 above M.6.</i>		✓
		Replace dry air desiccant.		✓
REMARKS:				

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log
 Date: 3/20/16
 Form emailed to:

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Sum of Readings	Sum of Readings	Sum of Readings
1/24/16	1/24/16	119.16	119.16	119.16
Calibration Gas Pressures				
O2/CO High Span, NOX Zero	SV1	550	510	440
NOX Low Span/CO Low Span	SV2	810	780	750
NOX High Span, O2/CO Zero	SV3	250	250	250
Stack Sample Line				
Sample Line Temperature	TC1	760	760	760
NH3 Converter Temperature	TC2	5.6	5.5	5.4
Sample Line Pressure/Vacuum	PI-1	3.8	3.9	3.9
Sample Line Pressure/Vacuum	PI-2	5.6	5.6	5.5
Sample Line Pressure/Vacuum	PI-4	7.3	7.4	7.4
Sample Line Pressure	PI-6	✓	✓	✓
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2	✓	✓	✓
Visual Checks				
Room enclosure temperature	Check HVAC controls	70.0	69.7	70.0
Moisture sensor A filter	MS-1	✓	✓	✓
Moisture sensor B filter	MS-2	✓	✓	✓
Sample pump operation (2)	HV-4	✓	✓	✓
Condensate drain pump		✓	✓	✓
NH3 Scrubber drain		✓	✓	✓
Flow meters				
System Flow	FM-1	4.0	4.0	4.0
O2 Analyzer	FM-2	1.4	1.4	1.4
NOX Analyzer	FM-3	1.45	1.45	1.45
NOX By-Pass	FM-4	1.2	1.2	1.2
CO Analyzer	FM-5	1.45	1.45	1.45
Cal Gas Flow (only during Calibration)	FM-6	7.0	7.0	7.1
System Flow	FM-7	3.5	3.5	3.5
NOX/NH3 Analyzer	FM-8	1.6	1.6	1.6
NOX/NH3 Analyzer By-Pass	FM-9	1.45	1.45	1.45
NOX Dry Air	FM-10	6.0	6.0	6.0
DAHS Checks				
Check DAHS for normal operation. Is system logging data?		✓	✓	✓
Check alarms in DAHS.		✓	✓	✓
Check chart recorder for normal operation		✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓	✓	✓
REMARKS:				

Mark as either Acceptable "A", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.
 Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS inspection

Date	11/11/16	11/12/16	11/13/16	11/14/16	11/15/16
Technician's Initial					
Calibration Gas Pressures	Please enter readings				
O2/CO High Span, NOX Zero	300	190	240	230	1800
NOX Low Span/CO Low Span	300	260	270	210	1830
NOX High Span, O2/CO Zero	570	570	520	480	1420
Stack Sample Line	Please enter readings				
Sample Line Temperature	250	250	290	250	250
NH3 Converter Temperature	760	760	760	760	760
Sample Line Pressure/Vacuum	5.2	5.9	5.4	4.8	5.1
Sample Line Pressure/Vacuum	3.3	3.7	4.2	4.1	4.1
Sample Line Pressure/Vacuum	5.4	5.0	5.0	5.0	5.2
Sample Line Pressure/Vacuum	8.0	7.8	3.3	3.0	3.0
Sample Line Pressure					
Verify functionality of Sample Pump A Flow Switch as necessary					
Verify functionality of Sample Pump B Flow Switch as necessary					
Visual Checks	Please enter readings				
Room/enclosure temperature	70.0	69.0	69.0	68.5	67.5
Check HVAC controls					
Moisture sensor A filter	MS-1	MS-1	MS-1	MS-1	MS-1
Moisture sensor B filter	MS-2	MS-2	MS-2	MS-2	MS-2
Sample pump operation (2)	HV-4	HV-4	HV-4	HV-4	HV-4
Condensate drain pump					
NH3 Scrubber drain					
Flow meters	Please enter readings				
System Flow	3.9	3.8	4.1	4.1	4.1
O2 Analyzer	1.4	1.4	1.45	1.45	1.45
NOX Analyzer	1.45	1.4	1.45	1.45	1.45
NOX By-Pass	1.2	1.2	1.2	1.2	1.2
CO Analyzer	1.45	1.45	1.45	1.45	1.45
Cal Gas Flow (only during Calibration)	3.9	3.6	4.0	3.9	3.9
System Flow	1.6	1.6	1.6	1.6	1.6
NOX/NH3 Analyzer	1.45	1.45	1.45	1.45	1.45
NOX/NH3 Analyzer By-Pass	690	690	690	690	690
NOX Dry Air					
DAHS Checks	Please enter readings				
Check DAHS for normal operation. Is system logging data?					
Check alarms in DAHS					
Check chart recorder for normal operation					
Check calibration drift for all analyzers/monitors. Did all calibrations pass?					
REMARKS:					

Mark as either Acceptable "V", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.
 Form emailed to: _____ Date: _____

Barre / Center / Grapeand / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Inspector	Station	Unit	Reading	Pass/Fail	Remarks
Please enter readings						
Technician's Initial	12/16	12/16	12/16	12/16	12/16	
Calibration Gas Pressures	SV1	1570	1490	1500	1500	
O2/CO High Span, NOX Zero	SV2	1650	1720	1590	1590	
NOX Low Span/CO Low Span	SV3	1780	1800	1640	1640	
NOX High Span, O2/CO Zero						
Stack Sample Line	TC1	250	250	250	250	
Sample Line Temperature	TC2	760	760	760	760	
NH3 Converter Temperature	PI-1	5.1	5.1	5.0	5.0	
Sample Line Pressure/Vacuum	PI-2	4.2	4.2	4.2	4.2	
Sample Line Pressure/Vacuum	PI-4	3.3	3.3	3.0	3.0	
Sample Line Pressure	PI-5	3.1	3.0	3.0	3.0	
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1	✓	✓	✓	✓	
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2	✓	✓	✓	✓	
Visual Checks						
Room/enclosure temperature		62.0	60.0	61.5	61.5	
Check HVAC controls						
Moisture sensor A filter	MS-1	✓	✓	✓	✓	
Moisture sensor B filter	MS-2	✓	✓	✓	✓	
Sample pump operation (2)		✓	✓	✓	✓	
Condensate drain pump		✓	✓	✓	✓	
NH3 Scrubber drain		✓	✓	✓	✓	
Flow meters						
System Flow	FM-1	4.1	4.1	4.1	4.1	
O2 Analyzer	FM-2	1.45	1.45	1.45	1.45	
NOX Analyzer	FM-3	1.5	1.5	1.5	1.5	
NOX By-Pass	FM-4	1.2	1.2	1.2	1.2	
CO Analyzer	FM-5	1.45	1.45	1.45	1.45	
Cal Gas Flow (only during Calibration)	FM-6	3.9	4.0	3.9	3.9	
System Flow	FM-7	1.6	1.6	1.6	1.6	
NOX/NH3 Analyzer	FM-8	1.45	1.45	1.45	1.45	
NOX/NH3 Analyzer By-Pass	FM-9	6.0	6.0	6.0	6.0	
NOX Dry Air	FM-10	✓	✓	✓	✓	
DAHS Checks						
Check DAHS for normal operation. Is system logging data?		✓	✓	✓	✓	
Check alarms in DAHS.		✓	✓	✓	✓	
Check chart recorder for normal operation		✓	✓	✓	✓	
Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓	✓	✓	✓	
REMARKS:						

Mark as either Acceptable "N", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Date: _____

Form emailed to: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	12/16/16	12/16/16	12/16/16	12/16/16
Calibration Gas Pressures					
O2/CO High Span, NOX Zero		1350	1310	1310	1170
NOX Low Span/CO Low Span		1490	1470	1470	1320
NOX High Span, O2/CO Zero		1560	1540	1500	1390
Stack Sample Line					
Sample Line Temperature		250	250	250	250
NH3 Converter Temperature		760	760	760	760
Sample Line Pressure/Vacuum		5.4	5.0	5.4	5.4
Sample Line Pressure/Vacuum		4.1	4.2	4.2	4.1
Sample Line Pressure/Vacuum		5.1	5.1	5.5	3.6
Sample Line Pressure		3.0	3.0	3.9	3.9
Verify functionality of Sample Pump A Flow Switch as necessary		✓	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary		✓	✓	✓	✓
Visual Checks					
Room/enclosure temperature		66.5	61.0	63.5	63.0
Moisture sensor A filter		✓	✓	✓	✓
Moisture sensor B filter		✓	✓	✓	✓
Sample pump operation (2)		✓	✓	✓	✓
Condensate drain pump		✓	✓	✓	✓
NH3 Scrubber drain		✓	✓	✓	✓
Flow meters					
System Flow		4.1	4.1	4.1	4.1
O2 Analyzer		1.45	1.45	1.45	1.45
NOX Analyzer		1.5	1.5	1.5	1.5
NOX By-Pass		1.2	1.2	1.2	1.2
CO Analyzer		1.45	1.45	1.45	1.45
Cal Gas Flow (only during Calibration)		4.0	3.9	3.9	3.9
System Flow		1.6	1.6	1.6	1.6
NOX/NH3 Analyzer		1.45	1.45	1.45	1.45
NOX/NH3 Analyzer By-Pass		6.10	6.10	6.10	6.00
NOX Dry Air		✓	✓	✓	✓
DAHS Checks					
Check DAHS for normal operation. Is system logging data?		✓	✓	✓	✓
Check alarms in DAHS.		✓	✓	✓	✓
Check chart recorder for normal operation		✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓	✓	✓	✓
REMARKS:					

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.
 Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail
	Calibration Gas Pressures								
	O ₂ /CO High Span, NOX Zero								
	NOX Low Span/CO Low Span								
	NOX High Span, O ₂ /CO Zero								
	Stack Sample Line								
	Sample Line Temperature								
	NH ₃ Converter Temperature								
	Sample Line Pressure/Vacuum								
	Sample Line Pressure/Vacuum								
	Sample Line Pressure/Vacuum								
	Sample Line Pressure								
	Verify functionality of Sample Pump A Flow Switch as necessary								
	Verify functionality of Sample Pump B Flow Switch as necessary								
	Visual Checks								
	Room/closure temperature								
	Moisture sensor A filter								
	Moisture sensor B filter								
	Sample pump operation (2)								
	Condensate drain pump								
	NH ₃ Scrubber drain								
	Flow meters								
	System Flow								
	O ₂ Analyzer								
	NOX Analyzer								
	NOX By-Pass								
	CO Analyzer								
	Cal Gas Flow (only during Calibration)								
	System Flow								
	NOX/NH ₃ Analyzer								
	NOX/NH ₃ Analyzer By-Pass								
	NOX Dry Air								
	DAHS Checks								
	Check DAHS for normal operation. Is system logging data?								
	Check alarms in DAHS.								
	Check chart recorder for normal operation								
	Check calibration drift for all analyzers/monitors. Did all calibrations pass?								
	REMARKS:								

Mark as either Acceptable "y", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.
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Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Enter	Sum	Enter	Enter	Enter	Enter
2/16/16	SM	2/16/16	SM	2/16/16	SM	2/16/16	SM
Please enter readings							
Calibration Gas Pressures	SV1	>150 PSI	570	2140			
O2/CO High Span, NOX Zero	SV2	>150 PSI	600	540			
NOX Low Span/CO Low Span	SV3	>150 PSI	120	590			
NOX High Span, O2/CO Zero							
Stack Sample Line							
Sample Line Temperature	TC1	250°F (+/- 5° F)	250	250			
NH3 Converter Temperature	TC2	760°F (+/- 5° C)	760	760			
Sample Line Pressure/Vacuum	PI-1	<10" Hg	5.5	5.2			
Sample Line Pressure/Vacuum	PI-2	3-10 PSI	4.2	4.2			
Sample Line Pressure/Vacuum	PI-4	<10" Hg	3.6	5.4			
Sample Line Pressure	PI-5	3-10 PSI	7.9	8.0			
Sample Line Pressure	FS-1	3 LPM	✓	✓			
Sample Line Pressure	FS-2	3 LPM	✓	✓			
Verify functionality of Sample Pump A Flow Switch as necessary			✓	✓			
Verify functionality of Sample Pump B Flow Switch as necessary			✓	✓			
Visual Checks							
Room/enclosure temperature	Check HVAC controls	72° F (+/- 3° F)	68.5	68.5			
Moisture sensor A filter	MS-1	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓			
Moisture sensor B filter	MS-2	Check if running OK	✓	✓			
Sample pump operation (2)	MS-3	Check if running OK	✓	✓			
Condensate drain pump	MS-4	Drain as needed	✓	✓			
NH3 Scrubber drain	MS-5	Drain as needed	✓	✓			
Flow meters							
System Flow	FM-1	3-5 LPM	4.2	4.7			
O2 Analyzer	FM-2	1.2-1.7 LPM	1.45	1.4			
NOX Analyzer	FM-3	1.2-1.7 LPM	1.5	1.5			
NOX Bypass	FM-4	1.2-1.7 LPM	1.2	1.2			
CO Analyzer	FM-5	1.2-1.7 LPM	1.45	1.45			
Cal Gas Flow (only during Calibration)	FM-6	> FM-1 & FM-7	3.8	4.0			
System Flow	FM-7	3-5 LPM	1.6	1.6			
NOX/NH3 Analyzer	FM-8	1.2-1.5 LPM	1.45	1.45			
NOX/NH3 Analyzer Bypass	FM-9	1.2-1.5 LPM	1.80	1.80			
NOX Dry Air	FM-10	500-700 CCM	✓	✓			
DAHS Checks							
Check DAHS for normal operation. Is system logging data?			✓	✓			
Check alarms in DAHS.			✓	✓			
Check chart recorder for normal operation			✓	✓			
Check calibration drift for all analyzers/monitors. Did all calibrations pass?			✓	✓			
REMARKS:							

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
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 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Parameter to be Checked	Unit	Sum	Unit
2/22/16	SCB	Calibration Gas Pressures		1820	1820
		O2/CO High Span, NOX Zero	>150 PSI	350	1970
		NOX Low Span/CO Low Span	>150 PSI	400	2090
		NOX High Span, O2/CO Zero			
		Stack Sample Line			
		Sample Line Temperature	250°F (41.5° F)	250	250
		NH3 Converter Temperature	760°F (41.5° C)	760	760
		Sample Line Pressure/Vacuum	< 10" Hg	6.4	4.5
		Sample Line Pressure/Vacuum	3-10 PSI	3.9	4.5
		Sample Line Pressure/Vacuum	< 10" Hg	6.5	5.4
		Sample Line Pressure	3-10 PSI	7.6	8.0
		Verify functionality of Sample Pump A Flow Switch as necessary	3 LPM	✓	✓
		Verify functionality of Sample Pump B Flow Switch as necessary	3 LPM	✓	✓
		Visual Checks			
		Room enclosure temperature	72° F (41.5° F)	67.5	68.0
		Check HVAC controls		✓	✓
		Moisture sensor A filter	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓
		Moisture sensor B filter	Check if running OK	✓	✓
		Sample pump operation (2)	Check if running OK	✓	✓
		Condensate drain pump	Drain as needed	✓	✓
		NH3 Scrubber drain		✓	✓
		Flow meters			
		System Flow	3-5 LPM	4.1	4.3
		O2 Analyzer	1.2-1.7 LPM	1.4	1.3
		NOx Analyzer	1.2-1.7 LPM	1.45	1.55
		NOX By-Pass	1.2-1.7 LPM	1.2	1.35
		CO Analyzer	1.2-1.7 LPM	1.45	1.5
		Cal Gas Flow (only during Calibration)	> FM-1 & FM-7	3.6	3.9
		System Flow	3-5 LPM	1.6	1.6
		NOXIN-3 Analyzer	1.2-1.5 LPM	1.45	1.45
		NOXIN-3 Analyzer By-Pass	500-700 CCM	650	648
		NOX Dry Air		✓	✓
		DAHs Checks		✓	✓
		Check DAHS for normal operation. Is system logging data?		✓	✓
		Check alarms in DAHS.		✓	✓
		Check chart recorder for normal operation		✓	✓
		Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓	✓
		REMARKS:			

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Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Time	Time	Time	Time
Calibration Gas Pressures					
O2/CO High Span, NOx Zero	SV1	1540	1530	1510	1520
NOx Low Span/CO Low Span	SV2	1730	1720	1710	1740
NOx High Span, O2/CO Zero	SV3	1840	1740	1720	1830
Stack Sample Line					
Sample Line Temperature	TC1	250	250	250	250
NH3 Converter Temperature	TC2	280	280	280	280
Sample Line Pressure/Vacuum	PI-1	4.4	4.5	4.4	4.6
Sample Line Pressure/Vacuum	PI-2	4.4	4.4	4.4	4.0
Sample Line Pressure/Vacuum	PI-3	4.5	4.6	4.6	4.8
Sample Line Pressure	PI-4	4.5	4.6	4.6	4.8
Sample Line Pressure	PI-5	4.0	4.9	4.9	4.8
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1	✓	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2	✓	✓	✓	✓
Visual Checks					
Room/enclosure temperature	Check HVAC controls	72°F (41.5°F)	70.0	69.5	69.0
Moisture sensor A filter	MS-1	✓	✓	✓	✓
Moisture sensor B filter	MS-2	✓	✓	✓	✓
Sample pump operation (2)	MS-3	✓	✓	✓	✓
Condensate drain pump	MS-4	✓	✓	✓	✓
NH3 Scrubber drain	HV-4	✓	✓	✓	✓
Flow meters					
System Flow	FM-1	4.3	4.2	4.0	3.9
O2 Analyzer	FM-2	1.45	1.45	1.45	1.44
NOx Analyzer	FM-3	1.55	1.5	1.5	1.49
NOx By-Pass	FM-4	1.4	1.3	1.3	1.3
CO Analyzer	FM-5	1.55	1.45	1.45	1.3
Cal Gas Flow (only during Calibration)	FM-6	7.9	3.9	4.0	3.9
System Flow	FM-7	1.6	1.6	1.6	1.6
NOx/NH3 Analyzer	FM-8	1.45	1.45	1.45	1.45
NOx/NH3 Analyzer By-Pass	FM-9	1.45	1.45	1.45	1.45
NOx Dry Air	FM-10	1.0	6.0	6.0	6.0
DAHs Checks					
Check DAHS for normal operation. Is system logging data?		✓	✓	✓	✓
Check alarms in DAHS.		✓	✓	✓	✓
Check chart recorder for normal operation		✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓	✓	✓	✓
REMARKS:					

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
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Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Parameter to be checked	Units	3/11/16	3/10/16	3/11/16
Technician's Initial					
Calibration Gas Pressures					
O2/CO High Span, NOX Zero	SV1	>150 PSI	1100	1010	980
NOX Low Span/CO Low Span	SV2	>150 PSI	1370	1390	1340
NOX High Span, O2/CO Zero	SV3	>150 PSI	1430	1390	1370
Stack Sample Line					
Sample Line Temperature	TC1	250°F (+/- 5°F)	250	250	250
NH3 Converter Temperature	TC2	760°F (+/- 5°C)	760	760	760
Sample Line Pressure/Vacuum	PI-1	< 10" Hg	6.0	5.5	5.3
Sample Line Pressure/Vacuum	PI-2	3-10 PSI	3.5	3.9	3.5
Sample Line Pressure/Vacuum	PI-4	< 10" Hg	6.1	6.2	6.3
Sample Line Pressure	PI-5	3-10 PSI	7.5	7.9	7.8
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1	3 LPM	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2	3 LPM	✓	✓	✓
Visual Checks					
Room/enclosure temperature	Check HVAC controls	72°F (+/- 5°F)	66.5	66.0	65.5
Moisture sensor A filter	MS-1	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓	✓
Moisture sensor B filter	MS-2	Check if running OK	✓	✓	✓
Sample pump operation (2)	MS-3	Check if running OK	✓	✓	✓
Condensate drain pump	MS-4	Check if running OK	✓	✓	✓
NH3 Scrubber drain	HV-4	Drain as needed	✓	✓	✓
Flow meters					
System Flow	FM-1	3-5 LPM	3.9	3.8	3.9
O2 Analyzer	FM-2	1.2-1.7 LPM	1.35	1.35	1.4
NOx Analyzer	FM-3	1.2-1.7 LPM	1.4	1.4	1.45
NOX By-Pass	FM-4	1.2-1.7 LPM	1.25	1.25	1.25
CO Analyzer	FM-5	1.2-1.7 LPM	1.45	1.45	1.5
Cal Gas Flow (only during Calibration)	FM-6	> FM-1 & FM-7	7.6	7.7	7.0
System Flow	FM-7	3-5 LPM	1.6	1.6	1.6
NOX/NH3 Analyzer	FM-8	1.2-1.5 LPM	1.45	1.45	1.45
NOX/NH3 Analyzer By-Pass	FM-9	1.2-1.5 LPM	1.45	1.45	1.45
NOX Dry Air	FM-10	500-700 CCM	600	600	600
DAHS Checks					
Check DAHS for normal operation. Is system logging data?			✓	✓	✓
Check alarms in DAHS.			✓	✓	✓
Check chart recorder for normal operation			✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?			✓	✓	✓
REMARKS:					

Mark as either Acceptable "A", Corrective action Required "X", or Actual Readings, where required

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Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Time	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
3/14/16	3:15	3/15/16	3/16/16	3/17/16	3/18/16	3/19/16		
Please enter readings								
Technician's Initial								
Calibration Gas Pressures		910	900	900	900	900		
O2/CO High Span, NOX Zero	SV1	122.0	122.0	120.0	119.0	119.0		
NOX Low Span/CO Low Span	SV2	132.0	132.0	131.0	130.0	130.0		
NOX High Span, O2/CO Zero	SV3	132.0	132.0	131.0	130.0	130.0		
Please enter readings								
Stack Sample Line		250	250	250	250	250		
Sample Line Temperature	TC1	76.0	76.0	76.0	76.0	76.0		
NH3 Converter Temperature	TC2	5.5	5.5	5.5	5.5	5.5		
Sample Line Pressure/Vacuum	PI-1	3.8	3.8	3.8	3.8	3.8		
Sample Line Pressure/Vacuum	PI-2	5.6	5.6	5.6	5.6	5.6		
Sample Line Pressure/Vacuum	PI-3	5.6	5.6	5.6	5.6	5.6		
Sample Line Pressure	PI-4	7.9	7.9	7.9	7.9	7.9		
Sample Line Pressure	PI-5	7.9	7.9	7.9	7.9	7.9		
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1	✓	✓	✓	✓	✓		
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2	✓	✓	✓	✓	✓		
Please enter readings								
Visual Checks		67.5	67.5	67.5	67.5	67.5		
Room enclosure temperature		✓	✓	✓	✓	✓		
Check HVAC controls								
Moisture sensor A filter	MS-1	✓	✓	✓	✓	✓		
Moisture sensor B filter	MS-2	✓	✓	✓	✓	✓		
Sample pump operation (2)		✓	✓	✓	✓	✓		
Condensate drain pump		✓	✓	✓	✓	✓		
NH3 scrubber drain		✓	✓	✓	✓	✓		
Please enter readings								
Flow meters		3.9	3.9	3.8	3.8	3.8		
System Flow	FM-1	1.4	1.4	1.35	1.35	1.35		
O2 Analyzer	FM-2	1.45	1.45	1.4	1.4	1.4		
NOX Analyzer	FM-3	1.2	1.2	1.2	1.2	1.2		
NOX By-Pass	FM-4	1.45	1.45	1.45	1.45	1.45		
CO Analyzer	FM-5	4.0	4.0	4.0	4.0	4.0		
Call Gas Flow (only during Calibration)	FM-6	1.6	1.6	1.6	1.6	1.6		
System Flow	FM-7	1.45	1.45	1.45	1.45	1.45		
NOX/NH3 Analyzer	FM-8	6.0	6.0	6.0	6.0	6.0		
NOX/NH3 Analyzer By-Pass	FM-9	6.0	6.0	6.0	6.0	6.0		
NOX Dry Air	FM-10	6.0	6.0	6.0	6.0	6.0		
Please enter readings								
DAHs Checks		✓	✓	✓	✓	✓		
Check DAHS for normal operation. Is system logging data?		✓	✓	✓	✓	✓		
Check alarms in DAHS.		✓	✓	✓	✓	✓		
Check chart recorder for normal operation		✓	✓	✓	✓	✓		
Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓	✓	✓	✓	✓		
REMARKS:								

Mark as either Acceptable "A", Corrective action Required "X", or Actual Readings, where required

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Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Mon	Tue	Wed	Thu	Fri	Sat	Sun
3/21/16	SO	3/22/16	3/23/16	3/24/16	3/25/16	3/26/16	3/27/16	3/28/16
Calibration Gas Pressures								
SV1		880	880	880	880	880	880	880
SV2		1200	1200	1200	1200	1200	1200	1200
SV3		1700	1700	1700	1700	1700	1700	1700
Stack Sample Line								
TC1		250	250	250	250	250	250	250
TC2		760	760	760	760	760	760	760
PI-1		6.0	6.0	6.0	6.0	6.0	6.0	6.0
PI-2		5.4	5.2	5.4	5.2	5.4	5.2	5.4
PI-3		6.4	6.3	6.4	6.3	6.4	6.3	6.4
PI-4		7.3	7.2	7.3	7.2	7.3	7.2	7.3
PI-5		1.1	1.1	1.1	1.1	1.1	1.1	1.1
FS-1		1.1	1.1	1.1	1.1	1.1	1.1	1.1
FS-2		1.1	1.1	1.1	1.1	1.1	1.1	1.1
Visual Checks								
Check HVAC controls		70.0	71.0	69.5	70.0	70.0	70.0	70.0
Moisture sensor A filter		✓	✓	✓	✓	✓	✓	✓
Moisture sensor B filter		✓	✓	✓	✓	✓	✓	✓
Sample pump operation (2)		✓	✓	✓	✓	✓	✓	✓
Condensate drain pump		✓	✓	✓	✓	✓	✓	✓
NH3 Scrubber drain		✓	✓	✓	✓	✓	✓	✓
Flow meters								
FM-1		4.7	4.7	4.7	4.7	4.7	4.7	4.7
FM-2		1.7	1.7	1.7	1.7	1.7	1.7	1.7
FM-3		1.8	1.8	1.8	1.8	1.8	1.8	1.8
FM-4		1.6	1.6	1.6	1.6	1.6	1.6	1.6
FM-5		1.8	1.8	1.8	1.8	1.8	1.8	1.8
FM-6		3.6	3.6	3.6	3.6	3.6	3.6	3.6
FM-7		1.5	1.5	1.5	1.5	1.5	1.5	1.5
FM-8		1.4	1.4	1.4	1.4	1.4	1.4	1.4
FM-9		1.5	1.5	1.5	1.5	1.5	1.5	1.5
FM-10		6.0	6.0	6.0	6.0	6.0	6.0	6.0
DAHIS Checks								
Check DAHS for normal operation. Is system loading data?		✓	✓	✓	✓	✓	✓	✓
Check alarms in DAHS.		✓	✓	✓	✓	✓	✓	✓
Check chart recorder for normal operation		✓	✓	✓	✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓	✓	✓	✓	✓	✓	✓
REMARKS:								

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
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 Checklist for CEMS Inspection

Date	Time	Units	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Technicians Initial									
Calibration Gas Pressures									
O2/CO High Span, NOX Zero	SV1	>150 PSI	7:20/16	7:20/16	7:20/16	7:20/16	7:20/16	7:20/16	7:20/16
NOX Low Span/CO Low Span	SV2	>150 PSI	7:20	7:20	7:20	7:20	7:20	7:20	7:20
NOX High Span, O2/CO Zero	SV3	>150 PSI	12:00	12:00	12:00	12:00	12:00	12:00	12:00
Stack Sample Line									
Sample Line Temperature	TC1	250°F (+/- 5°F)	7:50	7:50	7:50	7:50	7:50	7:50	7:50
NH3 Converter Temperature	TC2	760°F (+/- 5°C)	7:40	7:40	7:40	7:40	7:40	7:40	7:40
Sample Line Pressure/Vacuum	PI-1	< 10" Hg	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Sample Line Pressure/Vacuum	PI-2	3-10 PSI	5:1	5:1	5:1	5:1	5:1	5:1	5:1
Sample Line Pressure/Vacuum	PI-4	< 10" Hg	6:1	6:1	6:1	6:1	6:1	6:1	6:1
Sample Line Pressure	PI-5	3-10 PSI	7:5	7:5	7:5	7:5	7:5	7:5	7:5
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1	3 LPM	✓	✓	✓	✓	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2	3 LPM	✓	✓	✓	✓	✓	✓	✓
Visual Checks									
Room/enclosure temperature	Check HVAC controls		6:00	7:00					6:00
Moisture sensor A filter	MS-1	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓					✓
Moisture sensor B filter	MS-2	Check if running OK	✓	✓					✓
Condensate drain pump	RV-4	Check if running OK Drain as needed	✓	✓					✓
Flow meters									
System Flow	FM-1	3-5 LPM	4:6	4:6	4:6	4:6	4:6	4:6	4:6
O2 Analyzer	FM-2	1.2-1.7 LPM	1:7	1:7	1:7	1:7	1:7	1:7	1:7
NOX Analyzer	FM-3	1.2-1.7 LPM	1:7	1:7	1:7	1:7	1:7	1:7	1:7
NOX By-Pass	FM-4	1.2-1.7 LPM	1:5	1:5	1:5	1:5	1:5	1:5	1:5
CO Analyzer	FM-5	1.2-1.7 LPM	1:5	1:5	1:5	1:5	1:5	1:5	1:5
Cell Gas Flow (only during Calibration)	FM-6	> FM-1 & FM-7	7:5	7:5	7:5	7:5	7:5	7:5	7:5
System Flow	FM-7	3-5 LPM	7:5	7:5	7:5	7:5	7:5	7:5	7:5
NOX/NH3 Analyzer	FM-8	1.2-1.5 LPM	1:5	1:5	1:5	1:5	1:5	1:5	1:5
NOX/NH3 Analyzer By-Pass	FM-9	1.2-1.5 LPM	1:5	1:5	1:5	1:5	1:5	1:5	1:5
NOX Dry Air	FM-10	500-700 CCM	6:30	6:30	6:30	6:30	6:30	6:30	6:30
DAHIS Checks									
Check DAHIS for normal operation. Is system logging data?			✓	✓					✓
Check alarms in DAHIS.			✓	✓					✓
Check chart recorder for normal operation.			✓	✓					✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?			✓	✓					✓
REMARKS:									

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.
 Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Parameters to check	Unit	Sun	Mon	Tue	Wed	Thurs	Fri	Sat
Date: 4/15/16 4/15/16 4/15/16 4/15/16 4/15/16 4/15/16 4/15/16 4/15/16								
Technician's Initial: [Signature]								
Calibration Gas Pressures								
O2/CO High Span, NOX Zero	>150 PSI	300	300	300	300	300	300	300
NOX Low Span/CO Low Span	>150 PSI	310	310	310	310	310	310	310
NOX High Span, O2/CO Zero	>150 PSI	410	410	410	410	410	410	410
Stack Sample Line								
Sample Line Temperature	250°F (+/- 5°F)	250	250	250	250	250	250	250
NH3 Converter Temperature	780°F (+/- 5° C)	760	760	760	760	760	760	760
Sample Line Pressure/Vacuum	< 10" Hg	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Sample Line Pressure/Vacuum	3-10 PSI	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Sample Line Pressure/Vacuum	< 10" Hg	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Sample Line Pressure	3-10 PSI	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Sample Line Pressure	3 LPM	5.2	5.2	5.2	5.2	5.2	5.2	5.2
Sample Line Pressure	3 LPM	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Verify functionality of Sample Pump A Flow Switch as necessary		✓	✓	✓	✓	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary		✓	✓	✓	✓	✓	✓	✓
Visual Checks								
Room/enclosure temperature	72°F (+/- 5°F)	67.5	70.0	69.0	69.0	69.0	70.0	70.0
Check HVAC controls		✓	✓	✓	✓	✓	✓	✓
Moisture sensor A filter	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓	✓	✓	✓	✓	✓
Moisture sensor B filter		✓	✓	✓	✓	✓	✓	✓
Sample pump operation (2)	Check if running OK	✓	✓	✓	✓	✓	✓	✓
Condensate drain pump	Check if running OK	✓	✓	✓	✓	✓	✓	✓
NH3 Scrubber drain	Drain as needed	✓	✓	✓	✓	✓	✓	✓
Flow meters								
System Flow	3-5 LPM	4.6	4.6	4.6	4.6	4.6	4.6	4.6
O2 Analyzer	1.2-1.7 LPM	1.75	1.6	1.6	1.6	1.6	1.65	1.65
NOX Analyzer	1.2-1.7 LPM	1.75	1.75	1.75	1.75	1.75	1.75	1.75
CO Analyzer	1.2-1.7 LPM	1.8	1.6	1.6	1.6	1.6	1.6	1.6
CO Analyzer	1.2-1.7 LPM	1.8	1.8	1.8	1.8	1.8	1.8	1.8
CO Analyzer	> FM-1 & FM-7	3.3	3.3	3.3	3.3	3.3	3.3	3.3
CO Analyzer	3-5 LPM	3.7	3.7	3.7	3.7	3.7	3.7	3.7
NOX/NH3 Analyzer	1.2-1.5 LPM	1.5	1.5	1.5	1.5	1.5	1.5	1.5
NOX/NH3 Analyzer Bi-Pass	1.2-1.5 LPM	1.5	1.5	1.5	1.5	1.5	1.5	1.5
NOX Dry Air	500-700 CCM	680	680	680	680	680	680	680
DAHS Checks								
Check DAHS for normal operation. Is system logging data?		✓	✓	✓	✓	✓	✓	✓
Check alarms in DAHS.		✓	✓	✓	✓	✓	✓	✓
Check chart recorder for normal operation.		✓	✓	✓	✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓	✓	✓	✓	✓	✓	✓
REMARKS:								

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required

Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Form emailed to: _____

Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Limits	Notes
Please enter readings										
Calibration Gas Pressures										
O2/CO High Span, NOX Zero	SV1								>150 PSI	
NOX Low Span/CO Low Span	SV2								>150 PSI	
NOX High Span, O2/CO Zero	SV3									
Please enter readings										
Stack Sample Line	TC1								250°F (+/-5°F)	
Sample Line Temperature	TC2								760°F (+/-5°C)	
NH3 Converter Temperature	PL1								< 10" Hg	
Sample Line Pressure/Vacuum	PI-2								3-10 PSI	
Sample Line Pressure/Vacuum	PI-4								< 10" Hg	
Sample Line Pressure/Vacuum	PI-5								3-10 PSI	
Sample Line Pressure	FS-1								3 LPM	
Verify functionality of Sample Pump A Flow Switch as necessary	FS-2								3 LPM	
Verify functionality of Sample Pump B Flow Switch as necessary										
Please enter readings										
Visual Checks	Check HVAC controls								72°F (+/-5°F)	
Room/enclosure temperature										
Moisture sensor A filter	MS-1								Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	
Moisture sensor B filter	MS-2								Check if running OK	
Sample pump operation (2)									Check if running OK	
Condensate drain pump	RV-4								Drain as needed	
NH3 Scrubber drain										
Please enter readings										
Flow meters	FM-1								3-5 LPM	
System Flow	FM-2								12-17 LPM	
O2 Analyzer	FM-3								12-17 LPM	
NOX Analyzer	FM-4								12-17 LPM	
NOX Bypass	FM-5								12-17 LPM	
CO Analyzer	FM-6								> FM-1 & FM-7	
Cell Gas Flow (only during Calibration)	FM-7								3-5 LPM	
System Flow	FM-8								12-1.5 LPM	
NOX/NH3 Analyzer	FM-9								12-1.5 LPM	
NOX/NH3 Analyzer Bypass	FM-10								500-700 CCM	
NOX Dry Air										
Please enter readings										
DAHIS Checks										
Check DAHS for normal operation. Is system logging data?										
Check alarms in DAHS.										
Check chart recorder for normal operation										
Check calibration drift for all analyzers/monitors. Did all calibrations pass?										
REMARKS:										

Mark as either Acceptable "A", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.
 Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician Initial	Unit	Limit	Sub-Unit	Unit	Sub-Unit	Unit	Sub-Unit
4/11/16	4/11/16							
Please enter readings								
Calibration Gas Pressures								
O2/CO High Span, NOX Zero			>150 PSI					
NOX Low Span/CO Low Span			>150 PSI					
NOX High Span, O2/CO Zero			>150 PSI					
Please enter readings								
Stack Sample Line								
Sample Line Temperature			250°F (+/- 5° F)					
NH3 Converter Temperature			760°F (+/- 5° C)					
Sample Line Pressure/Vacuum			< 10" Hg					
Sample Line Pressure/Vacuum			3-10 PSI					
Sample Line Pressure/Vacuum			< 10" Hg					
Sample Line Pressure			3-10 PSI					
Verify functionality of Sample Pump A Flow Switch as necessary			3 LPM					
Verify functionality of Sample Pump B Flow Switch as necessary			3 LPM					
Please enter readings								
Visual Checks								
Room enclosure temperature			72° F (+/- 5° F)					
Check HVAC controls								
Moisture sensor A filter			Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.					
Moisture sensor B filter								
Sample pump operation (2)			Check if running OK					
Condensate drain pump			Check if running OK					
NH3 Scrubber drain			Drain as needed					
Please enter readings								
Flow meters								
System Flow			3-5 LPM					
O2 Analyzer			1.2-1.7 LPM					
NOx Analyzer			1.2-1.7 LPM					
NOx By-Pass			1.2-1.7 LPM					
CO Analyzer			1.2-1.7 LPM					
Cal Gas Flow (only during Calibration)			> FM-1 & FM-7					
System Flow			3-5 LPM					
NOx/NH3 Analyzer			1.2-1.5 LPM					
NOx/NH3 Analyzer By-Pass			1.2-1.5 LPM					
NOX Dry Air			500-700 CCM					
Please enter readings								
DAHS Checks								
Check DAHS for normal operation, is system logging data?								
Check alarms in DAHS.								
Check chart recorder for normal operation								
Check calibration drift for all analyzers/monitors. Did all calibrations pass?								
REMARKS:								

Mark as either Acceptable "A", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Inspector	Time	Sum	Time	Sum
4/13/16	4/13/16	4:27	4:27	4:27	4:27
Technician's Initial					
Calibration Gas Pressures					
O2/CO High Span, NOX Zero	300	250	250	250	250
NOX Low Span/CO Low Span	610	610	610	610	610
NOX High Span, O2/CO Zero	740	750	750	750	750
Stack Sample Line	Please enter readings				
Sample Line Temperature	250	250	250	250	250
NH3 Converter Temperature	760	760	760	760	760
Sample Line Pressure/Vacuum	6.0	5.9	6.0	6.0	6.0
Sample Line Pressure/Vacuum	5.1	5.1	5.1	5.1	5.1
Sample Line Pressure/Vacuum	6.1	6.1	6.1	6.1	6.1
Sample Line Pressure	6.0	6.0	6.0	6.0	6.0
Verify functionality of Sample Pump A Flow Switch as necessary	1	1	1	1	1
Verify functionality of Sample Pump B Flow Switch as necessary	1	1	1	1	1
Visual Checks	Please enter readings				
Room/enclosure temperature	71.0	70.0	70.0	71.0	71.5
Check HVAC controls					
MS-1	✓	✓	✓	✓	✓
MS-2	✓	✓	✓	✓	✓
HV-4	✓	✓	✓	✓	✓
Flow meters					
System Flow	4.6	4.6	4.6	4.6	4.6
O2 Analyzer	1.65	1.65	1.65	1.65	1.65
NOX Analyzer	1.75	1.75	1.75	1.75	1.75
NOX By-Pass	1.6	1.6	1.6	1.6	1.6
CO Analyzer	1.75	1.75	1.75	1.75	1.75
Cal Gas Flow (only during Calibration)	3.3	3.3	3.3	3.3	3.3
System Flow	1.7	1.65	1.7	1.7	1.7
NOX/NH3 Analyzer	1.55	1.65	1.65	1.55	1.55
NOX/NH3 Analyzer By-Pass	590	590	590	590	590
NOX Dry Air	Please enter readings				
DAHs Checks	✓	✓	✓	✓	✓
Check DAHS for normal operation, is system logging data?	✓	✓	✓	✓	✓
Check alarms in DAHS.	✓	✓	✓	✓	✓
Check chart recorder for normal operation	✓	✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?	✓	✓	✓	✓	✓
REMARKS:					

Mark as either Acceptable "A", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

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Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
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Date	Inspector	Time	Unit
5/24/16	5/24/16	5/24/16	5/24/16
Technician's Initial			
Calibration Gas Pressures			
O2/CO High Span, NOX Zero	260	220	1940
NOX Low Span/CO Low Span	580	580	510
NOX High Span, O2/CO zero	770	680	670
Stack Sample Line			
Sample Line Temperature	250	250	250
NH3 Converter Temperature	760	760	760
Sample Line Pressure/Vacuum	3.9	6.0	6.0
Sample Line Pressure/Vacuum	5.4	5.4	5.1
Sample Line Pressure/Vacuum	6.0	6.2	6.0
Sample Line Pressure	8.1	8.0	8.0
Verify functionality of Sample Pump A Flow Switch as necessary	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary	✓	✓	✓
Visual Checks			
Room/enclosure temperature	68.0	70.5	70.0
Check HVAC controls	72° F (+/- 5° F)	✓	✓
Moisture sensor A filter	MS-1	✓	✓
Moisture sensor B filter	MS-2	✓	✓
Sample pump operation (2)	✓	✓	✓
Condensate drain pump	✓	✓	✓
NH3 Scrubber drain	✓	✓	✓
Flow meters			
System Flow	4.7	4.6	4.6
O2 Analyzer	1.7	1.65	1.65
NOX Analyzer	1.8	1.75	1.75
NOX By-Pass	1.6	1.6	1.6
CO Analyzer	1.8	1.8	1.75
Cell Gas Flow (only during Calibration)	3.3	3.2	3.3
System Flow	1.65	1.65	1.65
NOX/NH3 Analyzer	1.6	1.55	1.55
NOX/NH3 Analyzer By-Pass	6.0	6.0	6.0
NOX Dry Air	✓	✓	✓
DAHS Checks			
Check DAHS for normal operation. Is system logging data?	✓	✓	✓
Check alarms in DAHS.	✓	✓	✓
Check chart recorder for normal operation	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?	✓	✓	✓
REMARKS:			

Mark as either "Acceptable", "Corrective action Required", or "Actual Readings, where required".
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Date: _____

Form emailed to: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	SV1	SV2	SV3	TC1	TC2	PI-1	PI-2	PI-4	PI-5	FS-1	FS-2	Room/enclosure temperature	Moisture sensor A filter	Moisture sensor B filter	Sample pump operation (2)	Condensate drain pump	NH ₃ Scrubber drain	Flow meters	System Flow	O ₂ Analyzer	NOx Analyzer	NOx By-Pass	CO Analyzer	Cal Gas Flow (only during Calibration)	System Flow	NOX/NH ₃ Analyzer	NOX/NH ₃ Analyzer By-Pass	NOX Dry Air	DAHs Checks	Check DAHS for normal operation. Is system logging data?	Check alarms in DAHS.	Check chart recorder for normal operation	Check calibration drift for all analyzers/monitors. Did all calibrations pass?	REMARKS:				
5/10/16	ST	1820	450	430	250	760	5.2	5.2	5.9	4.2	1	1	68.0	205	675	680	205	675	680	4.6	4.6	1.65	1.75	1.6	1.75	3.7	3.7	1.65	1.75	1.65	1.75	1.65	1.75	1.65	1.75	670	670	670	
5/10/16	ST	1820	450	430	250	760	5.2	5.2	5.9	4.2	1	1	68.0	205	675	680	205	675	680	4.6	4.6	1.65	1.75	1.6	1.75	3.7	3.7	1.65	1.75	1.65	1.75	1.65	1.75	1.65	1.75	670	670	670	
5/10/16	ST	1820	450	430	250	760	5.2	5.2	5.9	4.2	1	1	68.0	205	675	680	205	675	680	4.6	4.6	1.65	1.75	1.6	1.75	3.7	3.7	1.65	1.75	1.65	1.75	1.65	1.75	1.65	1.75	670	670	670	
5/10/16	ST	1820	450	430	250	760	5.2	5.2	5.9	4.2	1	1	68.0	205	675	680	205	675	680	4.6	4.6	1.65	1.75	1.6	1.75	3.7	3.7	1.65	1.75	1.65	1.75	1.65	1.75	1.65	1.75	670	670	670	

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
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Date	Technician's Initial	Permits	Sum	Wet	Dry	5/19/16	5/17/16	5/17/16	5/19/16
Calibration Gas Pressures									
O2/CO High Span, NOX Zero									1730
NOX Low Span/CO Low Span									470
NOX High Span, O2/CO Zero									620
Stack Sample Line									
Sample Line Temperature									250
NH3 Converter Temperature									710
Sample Line Pressure/Vacuum									5.8
Sample Line Pressure/Vacuum									5.1
Sample Line Pressure/Vacuum									6.0
Sample Line Pressure									8.0
Verify functionality of Sample Pump A Flow Switch as necessary									✓
Verify functionality of Sample Pump B Flow Switch as necessary									✓
Visual Checks									
Room/enclosure temperature									70.0
Moisture sensor A filter									✓
Moisture sensor B filter									✓
Sample pump operation (2)									✓
Condensate drain pump									✓
NH3 Scrubber drain									✓
Flow meters									
System Flow									4.6
O2 Analyzer									1.65
NOX Analyzer									1.75
NOX By-Pass									1.6
CO Analyzer									1.75
Cal Gas Flow (only during Calibration)									3.3
System Flow									1.7
NOX/NH3 Analyzer									1.55
NOX/NH3 Analyzer By-Pass									1.55
NOX Dry Air									670
DAHs Checks									
Check DAHS for normal operation. Is system logging data?									✓
Check alarms in DAHS.									✓
Check chart recorder for normal operation									✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?									✓
REMARKS:									

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.
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Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
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Date	Technician's Initial	Limit	Sum	Read	Sum
5/23/16	5/23/16	5/23/16	5/23/16	5/23/16	5/23/16
Please enter readings					
Calibration Gas Pressures					
O2/CO High Span, NOX Zero		>150 PSI	1510	1510	1530
NOX Low Span/CO Low Span		>150 PSI	410	410	400
NOX High Span, O2/CO Zero		>150 PSI	580	580	540
Please enter readings					
Stack Sample Line					
Sample Line Temperature		250°F (+/- 5°F)	250	250	250
NH3 Converter Temperature		760°F (+/- 5°C)	760	760	760
Sample Line Pressure/Vacuum		<10" Hg	5.8	5.8	5.7
Sample Line Pressure/Vacuum		3-10 PSI	5.0	5.1	5.1
Sample Line Pressure/Vacuum		<10" Hg	5.9	6.0	5.9
Sample Line Pressure		3-10 PSI	8.1	8.1	8.2
Verify functionality of Sample Pump A Flow Switch as necessary		3 LPM			
Verify functionality of Sample Pump B Flow Switch as necessary		3 LPM			
Please enter readings					
Visual Checks					
Room/enclosure temperature		72°F (+/- 5°F)	68.5	69.3	68.0
Moisture sensor A filter	MS-1	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓	✓
Moisture sensor B filter	MS-2	Check if running OK	✓	✓	✓
Sample pump operation (2)		Check if running OK	✓	✓	✓
Condensate drain pump		Check if running OK	✓	✓	✓
NH3 Scrubber drain	HV-4	Drain as needed	✓	✓	✓
Please enter readings					
Flow meters					
System Flow	FM-1	3-5 LPM	4.6	4.6	4.6
O2 Analyzer	FM-2	1.2-1.7 LPM	1.65	1.65	1.65
NOX Analyzer	FM-3	1.2-1.7 LPM	1.75	1.75	1.75
NOX By-pass	FM-4	1.2-1.7 LPM	1.6	1.6	1.6
CO Analyzer	FM-5	1.2-1.7 LPM	1.75	1.75	1.75
Cal Gas Flow (only during Calibration)	FM-6	> FM-1 & FM-7	3.3	3.3	3.3
System Flow	FM-7	3-5 LPM	1.65	1.65	1.65
NOX/NH3 Analyzer	FM-8	1.2-1.5 LPM	1.55	1.55	1.55
NOX/NH3 Analyzer By-Pass	FM-9	1.2-1.5 LPM	1.55	1.55	1.55
NOX Dry Air	FM-10	500-700 CCM	670	670	670
Please enter readings					
DAHs Checks					
Check DAHS for normal operation. Is system logging data?			✓	✓	✓
Check alarms in DAHS			✓	✓	✓
Check chart recorder for normal operation			✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?			✓	✓	✓
REMARKS:					

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Tag ID	Limit	Unit	Sum	Min	Max
07/16/16	SS	5716	0.11	16	0.12	0.11	0.16
Please enter readings							
Calibration Gas Pressures							
O2/CO High Span, NOX Zero	SV1		>150 PSI		1480	1460	1490
NOX Low Span/CO Low Span	SV2		>150 PSI		390	370	410
NOX High Span, O2/CO Zero	SV3		>150 PSI		550	520	570
Please enter readings							
Stack Sample Line							
Sample Line Temperature	TC1		250°F (+/- 5°F)		250	250	250
NH3 Converter Temperature	TC2		760°F (+/- 5°C)		760	760	760
Sample Line Pressure/Vacuum	PI-1		< 10" Hg		5.8	5.8	5.8
Sample Line Pressure/Vacuum	PI-2		3-10 PSI		5.1	5.1	5.1
Sample Line Pressure/Vacuum	PI-4		< 10" Hg		5.9	5.9	5.9
Sample Line Pressure	PI-5		3-10 PSI		6.1	6.1	6.1
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1		3 LPM		1	1	1
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2		3 LPM		1	1	1
Please enter readings							
Visual Checks							
Room/enclosure temperature			72° F (+/- 5° F)		68.5	68.5	71.0
Check HVAC controls							
Moisture sensor A filter	MS-1		Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.		✓	✓	✓
Moisture sensor B filter	MS-2		Check if running OK		✓	✓	✓
Sample pump operation (2)			Check if running OK		✓	✓	✓
Condensate drain pump			Check if running OK		✓	✓	✓
NH3 Scrubber drain	HV-4		Drain as needed		✓	✓	✓
Please enter readings							
Flow meters							
System Flow	FM-1		3-5 LPM		4.6	4.6	4.6
O2 Analyzer	FM-2		1.2-1.7 LPM		1.65	1.65	1.65
NOX Analyzer	FM-3		1.2-1.7 LPM		1.75	1.75	1.75
NOX By-Pass	FM-4		1.2-1.7 LPM		1.6	1.6	1.6
CO Analyzer	FM-5		1.2-1.7 LPM		1.75	1.75	1.75
Cell Gas Flow (only during Calibration)	FM-6		> FM-1 & FM-7		3.3	3.3	3.3
System Flow	FM-7		3-5 LPM		1.65	1.65	1.65
NOX/NH3 Analyzer	FM-8		1.2-1.5 LPM		1.55	1.55	1.55
NOX/NH3 Analyzer By-Pass	FM-9		1.2-1.5 LPM		1.55	1.55	1.55
NOX Dry Air	FM-10		500-700 CCM		590	590	590
Please enter readings							
DAHs Checks							
Check DAHS for normal operation. Is system logging data?					✓	✓	✓
Check alarms in DAHS.					✓	✓	✓
Check chart recorder for normal operation					✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?					✓	✓	✓
REMARKS:							

Mark as either "Acceptable", "Corrective action Required", "X", or "Actual Readings, where required".
 Note: All deficiencies must be reported to the Control Operator Immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

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Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
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Date	Technician's Initial	Flow	Temp	Pressure	Flow	Temp	Pressure
Please enter readings							
Calibration Gas Pressures		130	132	130	132	130	132
O2/CO High Span, NOx Zero		310	310	310	310	310	310
NOx Low Span/CO Low Span		520	520	520	520	520	520
NOx High Span, O2/CO Zero							
Stack Sample Line							
Sample Line Temperature		250	250	250	250	250	250
NH3 Converter Temperature		760	760	760	760	760	760
Sample Line Pressure/Vacuum		5.9	5.9	5.9	5.9	5.9	5.9
Sample Line Pressure/Vacuum		3.10	3.10	3.10	3.10	3.10	3.10
Sample Line Pressure/Vacuum		3.10	3.10	3.10	3.10	3.10	3.10
Sample Line Pressure		8.1	8.1	8.1	8.1	8.1	8.1
Verify functionality of Sample Pump A Flow Switch as necessary		3.10	3.10	3.10	3.10	3.10	3.10
Verify functionality of Sample Pump B Flow Switch as necessary		3 LPM	3 LPM	3 LPM	3 LPM	3 LPM	3 LPM
Visual Checks							
Room/enclosure temperature		69.0	69.5	69.0	69.0	70.5	69.5
Check HVAC controls		12° F (-7.5° F)					
Moisture sensor A filter	MS-1						
Moisture sensor B filter	MS-2						
Sample pump operation (2)							
Condensate drain pump							
NH3 Scrubber drain	HV-4						
Flow meters							
System Flow	FM-1	4.6	4.6	4.6	4.6	4.6	4.6
O2 Analyzer	FM-2	1.65	1.65	1.65	1.65	1.65	1.65
NOx Analyzer	FM-3	1.75	1.75	1.75	1.75	1.75	1.75
NOx By-Pass	FM-4	1.6	1.6	1.6	1.6	1.6	1.6
CO Analyzer	FM-5	1.75	1.75	1.75	1.75	1.75	1.75
Cal Gas Flow (only during Calibration)	FM-6	3.7	3.7	3.7	3.7	3.7	3.7
System Flow	FM-7	1.65	1.65	1.65	1.65	1.65	1.65
NOx/NH3 Analyzer	FM-8	1.55	1.55	1.55	1.55	1.55	1.55
NOx/NH3 Analyzer By-Pass	FM-9	590	590	590	590	590	590
NOx Dry Air	FM-10						
DAHs Checks							
Check DAHS for normal operation. Is system logging data?							
Check alarms in DAHS.							
Check chart recorder for normal operation							
Check calibration drift for all analyzers/monitors. Did all calibrations pass?							
REMARKS:							

Mark as either Acceptable "V", Corrective action Required "X", or Actual Readings, where required
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Date	Technician's Initial	6/15/16	6/16/16	6/17/16	6/17/16
Calibration Gas Pressures					
SV1	>150 PSI	1280	1270	1240	1210
SV2	>150 PSI	320	330	1930	1890
SV3	>150 PSI	340	350	2020	1990
Stack Sample Line					
TC1	250°F (+/- 5° F)	250	250	250	250
TC2	760°F (+/- 5° C)	760	760	760	760
PL-1	< 10" Hg	5.8	5.9	6.1	6.3
PL-2	3-10 PSI	5.3	5.2	5.3	5.3
PL-3	< 10" Hg	5.2	5.2	5.2	5.2
PL-4	< 10" Hg	5.2	5.2	5.2	5.2
PL-5	3-10 PSI	5.3	5.2	5.2	5.2
FS-1	3 LPM	✓	✓	✓	✓
FS-2	3 LPM	✓	✓	✓	✓
Visual Checks					
Room enclosure temperature					
MS-1	72° F (+/- 5° F)	65.0	64.0	67.5	68.5
Moisture sensor A filter					
MS-2	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓	✓	✓
Moisture sensor B filter					
MS-3	Sample pump operation (2)	✓	✓	✓	✓
Condensate drain pump					
HV-4	Check if running OK	✓	✓	✓	✓
NH3 Scrubber drain					
HV-4	Drain as needed	✓	✓	✓	✓
Flow meters					
FM-1	3-5 LPM	4.4	4.6	4.7	4.7
FM-2	1.2-1.7 LPM	1.65	1.65	1.65	1.65
FM-3	1.2-1.7 LPM	1.75	1.75	1.75	1.75
FM-4	1.2-1.7 LPM	1.6	1.6	1.6	1.65
FM-5	1.2-1.7 LPM	1.75	1.75	1.75	1.75
FM-6	> FM-1 & FM-7	3.3	3.3	3.3	3.3
FM-7	3-5 LPM	1.65	1.65	1.65	1.65
FM-8	1.2-1.5 LPM	1.55	1.55	1.55	1.55
FM-9	1.2-1.5 LPM	1.70	1.70	1.70	1.70
FM-10	500-700 CCM	570	570	570	570
DAHS Checks					
Check DAHS for normal operation, is system logging data?					
Check alarms in DAHS					
Check chart recorder for normal operation					
Check calibration drift for all analyzers/monitors. Did all calibrations pass?					
REMARKS:					

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Date	Technician's Initial	Sum	Readings	Pass
Calibration Gas Pressures				
O2/CO High Span, NOX Zero	SV1	1210	1210	✓
NOX Low Span/CO Low Span	SV2	2910	2910	✓
NOX High Span, O2/CO Zero	SV3	2910	2910	✓
Stack Sample Line				
Sample Line Temperature	TC1	250	250	✓
NH3 Converter Temperature	TC2	76.0	76.0	✓
Sample Line Pressure/Vacuum	PI-1	6.1	< 10" Hg	✓
Sample Line Pressure/Vacuum	PI-2	3.4	3-10 PSI	✓
Sample Line Pressure/Vacuum	PI-4	3.7	< 10" Hg	✓
Sample Line Pressure	PI-5	4.2	3-10 PSI	✓
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1	4.1	3 LPM	✓
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2	4.1	3 LPM	✓
Visual Checks				
Room enclosure temperature	Check HVAC controls	72.0	72°F (+/- 5°F)	✓
Moisture sensor A filter	MS-1	✓	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓
Moisture sensor B filter	MS-2	✓	Check if running OK	✓
Sample pump operation (2)	MS-2	✓	Check if running OK	✓
Condensate drain pump	HV-4	✓	Drain as needed	✓
NH3 Scrubber drain	HV-4	✓	Drain as needed	✓
Flow meters				
System Flow	FM-1	1.7	3-5 LPM	✓
O2 Analyzer	FM-2	1.7	1.2-1.7 LPM	✓
NOx Analyzer	FM-3	1.7	1.2-1.7 LPM	✓
NOX By-Pass	FM-4	1.65	1.2-1.7 LPM	✓
CO Analyzer	FM-5	1.75	1.2-1.7 LPM	✓
Cal Gas Flow (only during Calibration)	FM-6	1.75	> FM-1 & FM-7	✓
System Flow	FM-7	3.3	3-5 LPM	✓
NOX/NH3 Analyzer	FM-8	1.65	1.2-1.5 LPM	✓
NOX/NH3 Analyzer By-Pass	FM-9	1.55	1.2-1.5 LPM	✓
NOX Dry Air	FM-10	570	500-700 CCM	✓
DAHs Checks				
Check DAHS for normal operation, is system logging data?	DAHs Checks	✓		✓
Check alarms in DAHS	DAHs Checks	✓		✓
Check chart recorder for normal operation	DAHs Checks	✓		✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?	DAHs Checks	✓		✓
REMARKS:				

Mark as either Acceptable "Y", Corrective action Required "X", or Actual Readings, where required

Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

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Date	Technician's Initial	Tag No.	Unit	6/27/16	6/28/16	6/29/16	7/1/16
Calibration: Gas Pressures							
O2/CO High Span, NOx Zero		SV1	>150 PSI	1190	1200	1200	1150
NOx Low Span/CO Low Span		SV2	>150 PSI	1900	1920	1920	1880
NOx High Span, O2/CO Zero		SV3	>150 PSI	7000	7000	7010	6980
Stack Sample Line							
Sample Line Temperature		TC1	250°F (+/- 5°F)	250	250	250	250
NH3 Converter Temperature		TC2	760°F (+/- 5°C)	760	760	760	760
Sample Line Pressure/Vacuum		PI-1	< 1" Hg	6.2	6.1	6.2	6.1
Sample Line Pressure/Vacuum		PI-2	3-10 PSI	5.4	5.4	5.4	5.5
Sample Line Pressure/Vacuum		PI-4	< 1" Hg	6.3	6.3	6.2	6.2
Sample Line Pressure		PI-5	3-10 PSI	8.1	8.1	8.1	8.1
Verify functionality of Sample Pump A Flow Switch as necessary		FS-1	3 LPM				
Verify functionality of Sample Pump B Flow Switch as necessary		FS-2	3 LPM				
Visual Checks							
Room enclosure temperature		72°F (+/- 5°F)		70.2	71.0	70.0	68.0
Check HVAC controls				✓	✓	✓	✓
Moisture sensor A filter		MS-1	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓	✓	✓
Moisture sensor B filter		MS-2	Check if running OK	✓	✓	✓	✓
Sample pump operation (2)		HV-4	Check if running OK	✓	✓	✓	✓
Condensate drain pump			Drain as needed	✓	✓	✓	✓
NH3 Scrubber drain				✓	✓	✓	✓
Flow meters							
System Flow		FM-1	3-5 LPM	4.7	4.7	4.3	4.1
O2 Analyzer		FM-2	1.2-1.7 LPM	1.7	1.65	1.7	1.65
NOx Analyzer		FM-3	1.2-1.7 LPM	1.8	1.8	1.8	1.8
NOx By-Pass		FM-4	1.2-1.7 LPM	1.65	1.65	1.65	1.65
CO Analyzer		FM-5	1.2-1.7 LPM	1.75	1.75	1.75	1.8
Cal Gas Flow (only during Calibration)		FM-6	> FM-1 & FM-7	3.3	3.3	3.3	3.3
System Flow		FM-7	3-5 LPM	1.65	1.65	1.65	1.65
NOxNH3 Analyzer		FM-8	1.2-1.5 LPM	1.55	1.55	1.55	1.55
NOxNH3 Analyzer By-Pass		FM-9	1.2-1.5 LPM	1.55	1.55	1.55	1.55
NOx Dry Air		FM-10	500-700 CCM	670	670	670	670
DAHS Checks							
Check DAHS for normal operation, is system logging data?				✓	✓	✓	✓
Check alarms in DAHS				✓	✓	✓	✓
Check chart recorder for normal operation				✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?				✓	✓	✓	✓
REMARKS:							

Mark as either "Acceptable", "Corrective action Required", or "Actual Readings, where required".
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

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Date	Inspector	Station	7/16/16	7/17/16	7/18/16	7/19/16	7/20/16	7/21/16	7/22/16
Please enter readings									
Technician's Initial									
Calibration Gas Pressures									
O2/CO High Span, NOX Zero	SV1	>150 PSI	1011	0311	0511	0711	0911	1111	1311
NOX Low Span/CO Low Span	SV2	>150 PSI	1020	0320	0520	0720	0920	1120	1320
NOX High Span, O2/CO Zero	SV3	>150 PSI	1030	0330	0530	0730	0930	1130	1330
Stack Sample Line									
Sample Line Temperature	TC1	250°F (+/- 5° F)	250	250	250	250	250	250	250
NH3 Converter Temperature	TC2	760°F (+/- 5° C)	760	760	760	760	760	760	760
Sample Line Pressure/Vacuum	PI-1	< 10" Hg	6.1	6.2	6.3	6.4	6.5	6.6	6.7
Sample Line Pressure/Vacuum	PI-2	3-10 PSI	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Sample Line Pressure/Vacuum	PI-4	< 10" Hg	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Sample Line Pressure	PI-5	3-10 PSI	8.2	8.1	8.1	8.2	8.2	8.2	8.2
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1	3 LPM	✓	✓	✓	✓	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2	3 LPM	✓	✓	✓	✓	✓	✓	✓
Visual Checks									
Room/enclosure temperature		72° F (+/- 5° F)	70.5	68.5	67.0	70.5	70.5	70.5	68.5
Moisture sensor A filter	MS-1	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓	✓	✓	✓	✓	✓
Moisture sensor B filter	MS-2	Check if running OK	✓	✓	✓	✓	✓	✓	✓
Condensate drain pump	HV-4	Check if running OK	✓	✓	✓	✓	✓	✓	✓
NH3 Scrubber drain		Drain as needed	✓	✓	✓	✓	✓	✓	✓
Flow meters									
System Flow	FM-1	3-5 LPM	4.7	4.7	4.7	4.7	4.7	4.7	4.6
O2 Analyzer	FM-2	1.2-1.7 LPM	1.65	1.65	1.65	1.65	1.65	1.65	1.65
NOX Analyzer	FM-3	1.2-1.7 LPM	1.8	1.8	1.8	1.8	1.8	1.8	1.75
NOX By-Pass	FM-4	1.2-1.7 LPM	1.65	1.65	1.65	1.65	1.65	1.65	1.65
CO Analyzer	FM-5	1.2-1.7 LPM	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Cal Gas Flow (only during Calibration)	FM-6	> FM-1 & FM-7	3.4	3.4	3.4	3.4	3.4	3.4	3.4
System Flow	FM-7	3-5 LPM	4.6	4.6	4.6	4.6	4.6	4.6	4.6
NOX/NH3 Analyzer	FM-8	1.2-1.5 LPM	1.55	1.55	1.55	1.55	1.55	1.55	1.55
NOX/NH3 Analyzer By-Pass	FM-9	1.2-1.5 LPM	1.55	1.55	1.55	1.55	1.55	1.55	1.55
NOX Dry Air	FM-10	500-700 CCM	660	660	660	660	660	660	660
DAHs Checks									
Check DAHS for normal operation. Is system logging data?			✓	✓	✓	✓	✓	✓	✓
Check alarms in DAHS.			✓	✓	✓	✓	✓	✓	✓
Check chart recorder for normal operation			✓	✓	✓	✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?			✓	✓	✓	✓	✓	✓	✓
REMARKS:									

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

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Date	Technician's Initial	Calibration Gas Pressures	O2/CO High Span, NOX Zero	NOX Low Span/CO Low Span	NOX High Span, O2/CO Zero	Stack Sample Line	Sample Line Temperature	NH3 Converter Temperature	Sample Line Pressure/Vacuum	Sample Line Pressure/Vacuum	Sample Line Pressure	Verify functionality of Sample Pump A Flow Switch as necessary	Verify functionality of Sample Pump B Flow Switch as necessary	Visual Checks	Room/enclosure temperature	Room/closure temperature	Moisture sensor A filter	Moisture sensor B filter	Sample pump operation (2)	Condensate drain pump	NH3 Scrubber drain	Flow meters	System Flow	O2 Analyzer	NOX Analyzer	NOX Bypass	CO Analyzer	Cal Gas Flow (only during Calibration)	System Flow	NOX/NH3 Analyzer	NOX/NH3 Analyzer Bypass	NOX Dry Air	DAHS Checks	Check DAHS for normal operation, is system logging data?	Check alarms in DAHS	Check chart recorder for normal operation	Check calibration drift for all analyzers/monitors. Did all calibrations pass?	REMARKS:
7/27/12	SM	1080	1720	1830	1810	250	760F (+/- 5° F)	6.2	5.2	5.2	5.2	✓	✓	68.5	69.0	69.0	✓	✓	✓	✓	✓	4.6	3-5 LPM	1.65	1.75	1.65	1.75	3.4	3-5 LPM	1.65	1.55	580	✓	✓	✓	✓	✓	
7/27/12	SM	1080	1720	1830	1810	250	760F (+/- 5° C)	6.2	5.2	5.2	5.2	✓	✓	68.5	69.0	69.0	✓	✓	✓	✓	✓	4.6	1.2-1.7 LPM	1.65	1.75	1.65	1.75	3.4	1.2-1.5 LPM	1.65	1.55	580	✓	✓	✓	✓	✓	
7/27/12	SM	1080	1720	1830	1810	250	760F (+/- 5° F)	6.2	5.2	5.2	5.2	✓	✓	68.5	69.0	69.0	✓	✓	✓	✓	✓	4.6	1.2-1.7 LPM	1.65	1.75	1.65	1.75	3.4	1.2-1.5 LPM	1.65	1.55	580	✓	✓	✓	✓	✓	
7/27/12	SM	1080	1720	1830	1810	250	760F (+/- 5° F)	6.2	5.2	5.2	5.2	✓	✓	68.5	69.0	69.0	✓	✓	✓	✓	✓	4.6	1.2-1.7 LPM	1.65	1.75	1.65	1.75	3.4	1.2-1.5 LPM	1.65	1.55	580	✓	✓	✓	✓	✓	

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
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Date	Technician's Initial	Substation	Unit	Parameter	Reading	Pass/Fail
Calibration Gas Pressures						
	O2/CO High Span, NOX Zero	700	500	>150 PSI	310	✓
	NOX Low Span/CO Low Span	1600	1610	>150 PSI	150	✓
	NOX High Span, O2/CO Zero	1710	1710	>150 PSI	110	✓
Stack Sample Line						
	Sample Line Temperature	250	250	250F (+/- 5° F)	250	✓
	NH3 Converter Temperature	160	160	760F (+/- 5° C)	210	✓
	Sample Line Pressure/Vacuum	6.4	6.4	< 10" Hg	6.2	✓
	Sample Line Pressure/Vacuum	5.3	5.3	3-10 PSI	5.3	✓
	Sample Line Pressure/Vacuum	6.4	6.4	< 10" Hg	6.2	✓
	Sample Line Pressure	8.2	8.2	3-10 PSI	8.1	✓
	Verify functionality of Sample Pump A Flow Switch as necessary	✓	✓	3 LPM	✓	✓
	Verify functionality of Sample Pump B Flow Switch as necessary	✓	✓	3 LPM	✓	✓
Visual Checks						
	Room/enclosure temperature	70.0	71.0	72° F (+/- 5° F)	61.0	✓
	Check HVAC controls	✓	✓		✓	✓
	Moisture sensor A filter	✓	✓	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓
	Moisture sensor B filter	✓	✓		✓	✓
	Sample pump operation (2)	✓	✓	Check if running OK	✓	✓
	Condensate drain pump	✓	✓	Check if running OK	✓	✓
	NH3 Scrubber drain	✓	✓	Drain as needed	✓	✓
Flow meters						
	System Flow	4.7	4.7	3-5 LPM	4.7	✓
	O2 Analyzer	1.7	1.7	1.2-1.7 LPM	1.7	✓
	NOX Analyzer	1.8	1.8	1.2-1.7 LPM	1.8	✓
	NOX By-Pass	1.65	1.65	1.2-1.7 LPM	1.65	✓
	CO Analyzer	1.8	1.8	1.2-1.7 LPM	1.8	✓
	Cal Gas Flow (only during Calibration)	3.4	3.4	> FM-1 & FM-7	3.4	✓
	System Flow	1.1	1.1	3-5 LPM	1.1	✓
	NOX/NH3 Analyzer	1.5	1.5	1.2-1.5 LPM	1.5	✓
	NOX/NH3 Analyzer By-Pass	1.5	1.5	1.2-1.5 LPM	1.5	✓
	NOX Dry Air	5.0	5.0	500-700 CCM	5.0	✓
DAHs Checks						
	Check DAHS for normal operation, is system logging data?	✓	✓		✓	✓
	Check alarms in DAHS	✓	✓		✓	✓
	Check chart recorder for normal operation	✓	✓		✓	✓
	Check calibration drift for all analyzers/monitors. Did all calibrations pass?	✓	✓		✓	✓
REMARKS:						

Mark as either Acceptable "Y", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Limit	9/16/18	9/17/18	9/18/18	9/19/18	9/20/18
Calibration Gas Pressures							
O2/CO High Span, NOx Zero	SV1	>150 PSI	158.0	158.0	158.0	158.0	158.0
NOx Low Span/CO Low Span	SV2	>150 PSI	14.9	14.9	14.9	14.9	14.9
NOx High Span, O2/CO Zero	SV3	>150 PSI	14.9	14.9	14.9	14.9	14.9
Stack Sample Line							
Sample Line Temperature	TC1	250°F (41-5° F)	250	250	250	250	250
NH3 Converter Temperature	TC2	760°F (41-5° C)	760	760	760	760	760
Sample Line Pressure/Vacuum	PI-1	< 10" Hg	6.4	6.4	6.4	6.4	6.4
Sample Line Pressure/Vacuum	PI-2	3-10 PSI	5.4	5.4	5.4	5.4	5.4
Sample Line Pressure/Vacuum	PI-4	< 10" Hg	6.4	6.4	6.4	6.4	6.4
Sample Line Pressure	PI-5	3-10 PSI	6.4	6.4	6.4	6.4	6.4
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1	3 LPM	1	1	1	1	1
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2	3 LPM	1	1	1	1	1
Visual Checks							
Room/enclosure temperature	Check HVAC controls	72°F (4-5° F)	69.5	69.5	69.5	69.5	69.5
Moisture sensor A filter	MS-1	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓	✓	✓	✓
Moisture sensor B filter	MS-2	Check if running OK	✓	✓	✓	✓	✓
Sample pump operation (2)	HV-4	Check if running OK	✓	✓	✓	✓	✓
Condensate drain pump		Drain as needed	✓	✓	✓	✓	✓
NH3 Scrubber drain			✓	✓	✓	✓	✓
Flow meters							
System Flow	FM-1	3-5 LPM	4.7	4.7	4.7	4.7	4.7
O2 Analyzer	FM-2	12-17 LPM	1.5	1.5	1.5	1.5	1.5
NOx Analyzer	FM-3	12-17 LPM	1.8	1.8	1.8	1.8	1.8
NOx By-Pass	FM-4	12-17 LPM	1.65	1.65	1.65	1.65	1.65
CO Analyzer	FM-5	12-17 LPM	1.8	1.8	1.8	1.8	1.8
Cal Gas Flow (only during Calibration)	FM-6	> FM-1 & FM-7	3.4	3.4	3.4	3.4	3.4
System Flow	FM-7	3-5 LPM	1.7	1.7	1.7	1.7	1.7
NOxNH3 Analyzer	FM-8	12-15 LPM	1.55	1.55	1.55	1.55	1.55
NOxNH3 Analyzer By-Pass	FM-9	12-15 LPM	1.55	1.55	1.55	1.55	1.55
NOx Dry Air	FM-10	500-700 CCM	570	570	570	570	570
DAHs Checks			✓	✓	✓	✓	✓
Check DAHS for normal operation, is system localing data?			✓	✓	✓	✓	✓
Check alarms in DAHS			✓	✓	✓	✓	✓
Check chart recorder for normal operation			✓	✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?			✓	✓	✓	✓	✓
REMARKS:							

Mark as either "Acceptable", "Corrective action Required", or "Actual Readings, where required".
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS sniffer log book.

Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Time	Sum	Time	Sum
3/14/16	STP	8:15	8:17	8:16	8:16
Calibration Gas Pressures					
O2/CO High Span, NOX Zero		730	710	700	650
NOX Low Span/CO Low Span		1410	1400	1390	1310
NOX High Span, O2/CO Zero		1560	1550	1510	1460
Stack Sample Line					
Sample Line Temperature		250	250	250	250
NH3 Converter Temperature		760	760	760	760
Sample Line Pressure/Vacuum		6.1	6.1	6.1	6.1
Sample Line Pressure/Vacuum		9.2	9.1	9.1	9.1
Sample Line Pressure/Vacuum		6.2	6.2	6.2	6.2
Sample Line Pressure		3.4	3.4	3.1	3.1
Verify functionality of Sample Pump A Flow Switch as necessary					
Verify functionality of Sample Pump B Flow Switch as necessary					
Visual Checks					
Room enclosure temperature		68.5	68.3	68.3	69.5
Check HVAC controls					
Moisture sensor A filter	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.				
Moisture sensor B filter	Check if running OK				
Sample pump operation (2)	Check if running OK				
Condensate drain pump	Drain as needed				
NH3 Scrubber drain					
Flow meters					
System Flow	3-5 LPM	9.7	9.6	9.6	9.6
O2 Analyzer	1.2-1.7 LPM	1.65	1.65	1.65	1.65
NOx Analyzer	1.2-1.7 LPM	1.8	1.75	1.8	1.8
NOx By-Pass	1.2-1.7 LPM	1.65	1.65	1.65	1.65
CO Analyzer	1.2-1.7 LPM	6.75	6.75	6.75	6.75
Cal Gas Flow (only during Calibration)	> FM-1 & FM-7				
System Flow	3-5 LPM	3.4	3.4	3.4	3.4
NOX/NH3 Analyzer	1.2-1.5 LPM	1.65	1.7	1.7	1.7
NOX/NH3 Analyzer By-Pass	1.2-1.5 LPM	6.55	6.55	6.55	6.55
NOX Dry Air	500-700 CCM	560	560	560	560
DAHs Checks					
Check DAHS for normal operation. Is system logging data?					
Check alarms in DAHS.					
Check chart recorder for normal operation					
Check calibration drift for all analyzers/monitors. Did all calibrations pass?					
REMARKS:					

Mark as either Acceptable "V", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Inspector	Inspector	Inspector	Inspector	Inspector	Inspector
9/25/16	9/25/16	9/25/16	9/25/16	9/25/16	9/25/16	9/25/16
Please enter readings						
Technician's Initial						
Calibration Gas Pressures						
O2/CO High Span, NOX Zero	650	650	650	650	650	650
NOX Low Span/CO Low Span	1300	1310	1310	1310	1310	1310
NOX High Span, O2/CO Zero	1400	1470	1470	1470	1470	1470
Stack Sample Line						
Sample Line Temperature	250	250	250	250	250	250
NH3 Converter Temperature	760	760	760	760	760	760
Sample Line Pressure/Vacuum	6.2	6.2	6.2	6.2	6.2	6.2
Sample Line Pressure/Vacuum	3-10 PSI	3-10 PSI	3-10 PSI	3-10 PSI	3-10 PSI	3-10 PSI
Sample Line Pressure/Vacuum	< 10" Hg	< 10" Hg	< 10" Hg	< 10" Hg	< 10" Hg	< 10" Hg
Sample Line Pressure	6.2	6.2	6.2	6.2	6.2	6.2
Verify functionality of Sample Pump A Flow Switch as necessary	4.4	4.4	4.4	4.4	4.4	4.4
Verify functionality of Sample Pump B Flow Switch as necessary	1.1	1.1	1.1	1.1	1.1	1.1
Visual Checks						
Room temperature	68.0	69.5	69.5	69.5	69.5	69.5
Check HVAC controls						
Moisture sensor A filter	MS-1	✓	✓	✓	✓	✓
Moisture sensor B filter	MS-2	✓	✓	✓	✓	✓
Sample pump operation (2)		✓	✓	✓	✓	✓
Condensate drain pump		✓	✓	✓	✓	✓
NH3 scrubber drain		✓	✓	✓	✓	✓
Flow meters						
System Flow	FM-1	4.6	4.6	4.6	4.6	4.6
O2 Analyzer	FM-2	1.7	1.7	1.7	1.7	1.7
NOX Analyzer	FM-3	1.8	1.8	1.8	1.8	1.8
NOX By-Pass	FM-4	1.65	1.65	1.65	1.65	1.65
CO Analyzer	FM-5	1.75	1.75	1.75	1.75	1.75
Call Gas Flow (only during Calibration)	FM-6	3.4	3.4	3.4	3.4	3.4
System Flow	FM-7	1.6	1.6	1.6	1.6	1.6
NOX/NH3 Analyzer	FM-8	1.55	1.55	1.55	1.55	1.55
NOX/NH3 Analyzer By-Pass	FM-9	1.55	1.55	1.55	1.55	1.55
NOX Dry Air	FM-10	6.40	6.40	6.40	6.40	6.40
DAHs Checks		✓	✓	✓	✓	✓
Check DAHS for normal operation. Is system logging data?		✓	✓	✓	✓	✓
Check alarms in DAHS		✓	✓	✓	✓	✓
Check chart recorder for normal operation		✓	✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓	✓	✓	✓	✓
REMARKS:						

Mark as either Acceptable "X", Corrective action Required "X", or Actual Readings, where required
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Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Inspector	Time	Unit	Flow	Temp	Pressure	Flow	Temp	Pressure	Flow	Temp	Pressure
9/12/16	OC	9/11/16	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC
Technician's Initial												
Calibration Gas Pressures												
O2/CO High Span, NOX Zero												
NOX Low Span/CO Low Span												
NOX High Span, O2/CO Zero												
Stack Sample Line												
Sample Line Temperature												
NH3 Converter Temperature												
Sample Line Pressure/Vacuum												
Sample Line Pressure/Vacuum												
Sample Line Pressure/Vacuum												
Sample Line Pressure												
Verify functionality of Sample Pump A Flow Switch as necessary												
Verify functionality of Sample Pump B Flow Switch as necessary												
Visual Checks												
Room/enclosure temperature												
Moisture sensor A filter												
Moisture sensor B filter												
Sample pump operation (?)												
Condensate drain pump												
NH3 Scrubber drain												
Flow meters												
System Flow												
O2 Analyzer												
NOX Analyzer												
NOX By-Pass												
CO Analyzer												
Cell Gas Flow (only during Calibration)												
System Flow												
NOX/NH3 Analyzer												
NOX/NH3 Analyzer By-Pass												
NOX Dry Air												
DAHS Checks												
Check DAHS for normal operation. Is system logging data?												
Check alarms in DAHS.												
Check start recorder for normal operation												
Check calibration drift for all analyzers/monitors. Did all calibrations pass?												
REMARKS:												

Mark as either Acceptable "Y", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Date: _____

Form emailed to: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Inspector	Station	Unit	Time	Signature
9/16/16	9/16/16	9/16/16	9/16/16	9/16/16	9/16/16
Technician's Initial					
Calibration Gas Pressures					
O2/CO High Span, NOX Zero	530	510	570	500	
NOX Low Span/CO Low Span	1140	1160	1180	1150	
NOX High Span, O2/CO Zero	1340	1320	1340	1310	
Stack Sample Line					
Sample Line Temperature	250	250	250	250	
NH3 Converter Temperature	740	740	740	740	
Sample Line Pressure/Vacuum	6.4	6.3	6.4	6.4	
Sample Line Pressure/Vacuum	3-10 PSI	5.3	5.4	5.4	
Sample Line Pressure/Vacuum	< 10" Hg	6.3	6.3	6.2	
Sample Line Pressure	3-10 PSI	8.1	8.2	8.2	
Verify functionality of Sample Pump A Flow Switch, as necessary	✓	✓	✓	✓	
Verify functionality of Sample Pump B Flow Switch, as necessary	✓	✓	✓	✓	
Visual Checks					
Room temperature	72° F (+/- 5° F)	68.5	68.5	68.5	
Check HVAC controls	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓	✓	
MS-1	Moisture sensor B filter	✓	✓	✓	
MS-2	Moisture sensor B filter	✓	✓	✓	
MS-2	Sample pump operation (2)	✓	✓	✓	
MS-2	Condensate drain pump	✓	✓	✓	
MS-2	NH3 Scrubber drain	✓	✓	✓	
Flow meters					
FM-1	System Flow	4.7	4.7	4.7	
FM-2	O2 Analyzer	1.7	1.7	1.7	
FM-3	NOX Analyzer	1.8	1.8	1.8	
FM-4	NOX By-Pass	1.65	1.65	1.7	
FM-5	CO Analyzer	1.75	1.75	1.8	
FM-6	CO Gas Flow (only during Calibration)	3.4	3.4	3.4	
FM-7	System Flow	1.7	1.7	1.7	
FM-8	NOX/NH3 Analyzer	1.35	1.35	1.35	
FM-9	NOX/NH3 Analyzer By-Pass	1.35	1.35	1.35	
FM-10	NOX Dry Air	650	650	650	
DAHS Checks					
Check DAHS for normal operation. Is system logging data?	✓	✓	✓	✓	
Check alarms in DAHS.	✓	✓	✓	✓	
Check chart recorder for normal operation	✓	✓	✓	✓	
Check calibration drift for all analyzers/monitors. Did all calibrations pass?	✓	✓	✓	✓	
REMARKS:					

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
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Form emailed to: _____

Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Time	Location	Inspector	Time	Time
9/12/16	9:13/16	90	90		9/16/16
Please enter readings					
SV1	>150 PSI	480			480
SV2	>150 PSI	110			1100
SV3	>150 PSI	1300			1300
Please enter readings					
TC1	250°F (+/- 5°F)	250			250
TC2	760°F (+/- 5°C)	760			760
PL-1	< 10" Hg	6.2			6.2
PL-2	3-10 PSI	5.3			5.3
PL-3	< 10" Hg	6.2			6.2
PL-4	3-10 PSI	5.1			5.1
PL-5	3 LPM	1.1			1.1
FS-1	3 LPM	1.1			1.1
FS-2	3 LPM	1.1			1.1
Please enter readings					
Check HVAC controls					
MS-1	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓			✓
MS-2	Check if running OK	✓			✓
MS-3	Check if running OK	✓			✓
MS-4	Drain as needed	✓			✓
Please enter readings					
Flow meters					
FM-1	3-5 LPM	4.7			4.7
FM-2	1.2-1.7 LPM	1.7			1.7
FM-3	1.2-1.7 LPM	1.8			1.8
FM-4	1.2-1.7 LPM	1.65			1.65
FM-5	1.2-1.7 LPM	1.75			1.75
FM-6	> FM-1 & FM-7				
FM-7	3-5 LPM	3.4			3.4
FM-8	1.2-1.5 LPM	1.7			1.7
FM-9	1.2-1.5 LPM	1.55			1.55
FM-10	500-700 CCM	650			650
Please enter readings					
DAHS Checks					
	Check DAHS for normal operation. Is system logging data?	✓			✓
	Check alarms in DAHS.	✓			✓
	Check chart recorder for normal operation	✓			✓
	Check calibration drift for all analyzers/monitors. Did all calibrations pass?	✓			✓
REMARKS:					

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Time	Location	Time	Location	Time	Location
9/13/16	CS	9:20	9/13/16	CS	9:20	9/13/16	CS
Please enter readings							
Calibration Gas Pressures		380	350	330	330	330	330
O2/CO High Span, NOX Zero		1810	1710	1710	1710	1710	1710
NOX Low Span/CO Low Span		1200	1140	1160	1160	1160	1160
NOX High Span, O2/CO Zero							
Stack Sample Line							
Sample Line Temperature		750	750	750	750	750	750
NH3 Converter Temperature		760	760	760	760	760	760
Sample Line Pressure/Vacuum		6.3	6.3	6.3	6.3	6.3	6.3
Sample Line Pressure/Vacuum		5.1	5.2	5.2	5.2	5.1	5.1
Sample Line Pressure/Vacuum		6.5	6.3	6.3	6.3	6.4	6.4
Sample Line Pressure		8.2	8.2	8.2	8.2	8.2	8.2
Verify functionality of Sample Pump A Flow Switch as necessary							
Verify functionality of Sample Pump B Flow Switch as necessary							
Visual Checks							
Room/enclosure temperature		70.0	68.5	69.0	68.0	71.0	71.0
Check HVAC controls							
MS-1	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓	✓	✓	✓	✓
MS-2	Moisture sensor B filter	✓	✓	✓	✓	✓	✓
HV-4	Sample pump operation (2) Condensate drain pump NH3 Scrubber drain	✓	✓	✓	✓	✓	✓
Please enter readings							
Flow meters		4.6	4.7	4.7	4.7	4.7	4.7
System Flow	3-5 LPM	1.65	1.7	1.7	1.7	1.7	1.7
O2 Analyzer	12-17 LPM	1.75	1.8	1.8	1.8	1.8	1.8
NOx Analyzer	12-17 LPM	1.65	1.65	1.65	1.65	1.65	1.65
NOx By-Pass	12-17 LPM	1.75	1.75	1.75	1.75	1.75	1.75
CO Analyzer	> FM-1 & FM-7	3.4	3.4	3.4	3.4	3.4	3.4
System Flow	3-5 LPM	1.7	1.7	1.7	1.7	1.7	1.7
NOX/NH3 Analyzer	12-1.5 LPM	6.5	6.5	6.5	6.5	6.5	6.5
NOX/NH3 Analyzer By-Pass	12-1.5 LPM	6.5	6.5	6.5	6.5	6.5	6.5
NOX Div Air	500-700 CCM						
Please enter readings							
DAHs Checks		✓	✓	✓	✓	✓	✓
Check DAHS for normal operation. Is system logging data?		✓	✓	✓	✓	✓	✓
Check alarms in DAHS.		✓	✓	✓	✓	✓	✓
Check chart recorder for normal operation		✓	✓	✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓	✓	✓	✓	✓	✓
REMARKS:							

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator Immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	9/24/16	9/27/16	9/28/16	9/30/16
Calibration Gas Pressures					
O2/CO High Span, NOX Zero		300	250	230	194.0
NOX Low Span/CO Low Span		550	510	510	510
NOX High Span, O2/CO Zero		1130	1170	1080	1030
Stack Sample Line					
Sample Line Temperature		250	250	250	250
NH3 Converter Temperature		760	760	760	760
Sample Line Pressure/Vacuum		6.4	6.4	6.4	6.3
Sample Line Pressure/Vacuum		5.0	5.0	5.0	5.3
Sample Line Pressure/Vacuum		6.3	6.4	6.4	6.3
Sample Line Pressure		5.1	5.1	5.1	5.2
Verify functionality of Sample Pump A Flow Switch as necessary		✓	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary		✓	✓	✓	✓
Visual Checks					
Room/enclosure temperature		64.0	70.5	71.0	68.0
Check HVAC controls		✓	✓	✓	✓
Moisture sensor A filter		✓	✓	✓	✓
Moisture sensor B filter		✓	✓	✓	✓
Sample pump operation (2)		✓	✓	✓	✓
Condensate drain pump		✓	✓	✓	✓
NH3 Scrubber drain		✓	✓	✓	✓
Flow meters					
System Flow		4.6	4.6	4.6	4.6
O2 Analyzer		1.75	1.75	1.75	1.75
NOX Analyzer		1.75	1.75	1.75	1.75
NOX By-Pass		1.65	1.65	1.65	1.65
CO Analyzer		1.75	1.75	1.75	1.75
Cell Gas Flow (only during Calibration)		3.4	3.4	3.4	3.4
System Flow		1.65	1.65	1.65	1.7
NOX/NH3 Analyzer		1.55	1.55	1.55	1.55
NOX/NH3 Analyzer By-Pass		650	650	650	650
NOX Dry Air		650	650	650	650
DAHs Checks					
Check DAHS for normal operation. Is system logging data?		✓	✓	✓	✓
Check alarms in DAHS		✓	✓	✓	✓
Check chart recorder for normal operation		✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓	✓	✓	✓
REMARKS:					

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Technician's Initial	10/31/16	11/1/16	11/2/16	11/3/16	11/4/16	11/5/16	11/7/16
Calibration Gas Pressures	Please enter readings						
O ₂ /CO High Span, NOX Zero	1940	1920	1900	1910	1900	1910	1900
NOX Low Span/CO Low Span	710	710	710	710	710	710	710
NOX High Span, O ₂ /CO Zero	930	920	940	940	940	940	920
Stack Sample Line	Please enter readings						
Sample Line Temperature	250	250	250	250	250	250	250
NH ₃ Converter Temperature	710	710	710	710	710	710	710
Sample Line Pressure/Vacuum	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Sample Line Pressure/Vacuum	5.0	5.0	5.3	5.3	5.0	5.0	5.0
Sample Line Pressure/Vacuum	6.3	6.4	6.3	6.3	6.3	6.3	6.3
Sample Line Pressure	9.2	8.1	8.1	8.1	8.1	8.1	8.1
Verify functionality of Sample Pump A Flow Switch as necessary	✓	✓	✓	✓	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary	✓	✓	✓	✓	✓	✓	✓
Visual Checks	Please enter readings						
Room/enclosure temperature	70.0	73.0	68.0	68.0	68.0	70.5	70.5
Check HVAC controls	72° F (+/- 5° F)	72° F (+/- 5° F)	72° F (+/- 5° F)	72° F (+/- 5° F)	72° F (+/- 5° F)	72° F (+/- 5° F)	72° F (+/- 5° F)
Moisture sensor A filter	MS-1	MS-1	MS-1	MS-1	MS-1	MS-1	MS-1
Moisture sensor B filter	MS-2	MS-2	MS-2	MS-2	MS-2	MS-2	MS-2
Sample pump operation (?)	HV-4	HV-4	HV-4	HV-4	HV-4	HV-4	HV-4
Condensate drain pump	FM-1	FM-1	FM-1	FM-1	FM-1	FM-1	FM-1
NH ₃ Scrubber drain	FM-2	FM-2	FM-2	FM-2	FM-2	FM-2	FM-2
Flow meters	FM-3	FM-3	FM-3	FM-3	FM-3	FM-3	FM-3
System Flow	4.6	4.6	4.7	4.7	4.7	4.7	4.7
O ₂ Analyzer	1.65	1.65	1.7	1.7	1.65	1.65	1.65
NOX Analyzer	1.75	1.75	1.8	1.8	1.75	1.75	1.75
NOX By-Pass	1.6	1.6	1.65	1.65	1.65	1.65	1.65
CO Analyzer	1.7	1.75	1.75	1.75	1.75	1.75	1.75
Cal Gas Flow (only during Calibration)	3.4	3.5	3.5	3.5	3.4	3.4	3.4
System Flow	1.65	1.7	1.7	1.7	1.65	1.65	1.65
NOX/NH ₃ Analyzer	1.55	1.55	1.6	1.6	1.55	1.55	1.55
NOX/NH ₃ Analyzer By-Pass	650	650	650	650	650	650	650
NOX Dry Air	Please enter readings						
DAH-S Checks	DAH-S	DAH-S	DAH-S	DAH-S	DAH-S	DAH-S	DAH-S
Check DAH-S for normal operation. Is system logging data?	✓	✓	✓	✓	✓	✓	✓
Check alarms in DAH-S.	✓	✓	✓	✓	✓	✓	✓
Check chart recorder for normal operation	✓	✓	✓	✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?	✓	✓	✓	✓	✓	✓	✓
REMARKS:							

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Calibration Gas Pressures		10/10/16	10/11/16	10/12/16	10/13/16			
O2/CO High Span, NOX Zero		14.0	14.0	14.0	14.0	14.0		
NOX Low Span/CO Low Span		8.0	8.0	8.0	8.0	8.0		
NOX High Span, O2/CO Zero		25.0	25.0	25.0	25.0	25.0		
Stack Sample Line		76.0	76.0	76.0	76.0	76.0		
Sample Line Temperature		6.3	6.3	6.3	6.3	6.3		
NH3 Converter Temperature		5.4	5.4	5.4	5.4	5.4		
Sample Line Pressure/Vacuum		6.3	6.3	6.3	6.3	6.3		
Sample Line Pressure/Vacuum		8.3	8.3	8.3	8.3	8.3		
Sample Line Pressure		1.1	1.1	1.1	1.1	1.1		
Verify functionality of Sample Pump A Flow Switch as necessary		1.1	1.1	1.1	1.1	1.1		
Verify functionality of Sample Pump B Flow Switch as necessary		1.1	1.1	1.1	1.1	1.1		
Visual Checks		68.5	68.5	68.5	68.5	68.5		
Room/enclosure temperature		72°F (+/- 5°F)						
Moisture sensor A filter	MIS-1	✓	✓	✓	✓	✓		
Moisture sensor B filter	MIS-2	✓	✓	✓	✓	✓		
Sample pump operation (2)		✓	✓	✓	✓	✓		
Condensate drain pump		✓	✓	✓	✓	✓		
NH3 Scrubber drain		✓	✓	✓	✓	✓		
Flow meters		4.7	4.7	4.7	4.7	4.7		
System Flow	FM-1	3-5 LPM						
O2 Analyzer	FM-2	1.2-1.7 LPM						
NOx Analyzer	FM-3	1.2-1.7 LPM						
NOx By-Pass	FM-4	1.2-1.7 LPM						
CO Analyzer	FM-5	1.2-1.7 LPM						
Cal Gas Flow (only during Calibration)	FM-6	> FM-1 & FM-7						
System Flow	FM-7	3-5 LPM						
NOX/NH3 Analyzer	FM-8	1.2-1.5 LPM						
NOX/NH3 Analyzer By-Pass	FM-9	1.2-1.5 LPM						
NOX Dry Air	FM-10	500-700 CCM						
DAHs Checks		1.1	1.1	1.1	1.1	1.1		
Check DAHS for normal operation. Is system logging data?		✓	✓	✓	✓	✓		
Check alarms in DAHS		✓	✓	✓	✓	✓		
Check chart recorder for normal operation		✓	✓	✓	✓	✓		
Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓	✓	✓	✓	✓		
REMARKS:								

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
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Barre / Center / Grapeand / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Time	Inspector	Unit	Weather	Wind	Temp
10/21/16	10:15 AM	10/21/16				
Technician's Initial						
Calibration Gas Pressures						
O2/CO High Span, NOX Zero	SV1	>150 PSI				1380
NOX Low Span/CO Low Span	SV2	>150 PSI				2850
NOX High Span, O2/CO Zero	SV3	>150 PSI				570
Stack Sample Line						
Sample Line Temperature	TC1	250°F (+/- 5° F)				770
NH3 Converter Temperature	TC2	760°F (+/- 5° C)				760
Sample Line Pressure/Vacuum	PI-1	< 10" Hg				6.5
Sample Line Pressure/Vacuum	PI-2	3-10 PSI				5.0
Sample Line Pressure/Vacuum	PI-4	< 10" Hg				6.5
Sample Line Pressure	PI-5	3-10 PSI				6.5
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1	3 LPM				✓
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2	3 LPM				✓
Visual Checks						
Room/enclosure temperature	Check HVAC controls		72° F (+/- 5° F)			70.5
Moisture sensor A filter	MS-1	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.				✓
Moisture sensor B filter	MS-2	Check if running OK				✓
Sample Pump operation (2)		Check if running OK				✓
Condensate drain pump		Check if running OK				✓
NH3 Scrubber drain	HV-4	Drain as needed				✓
Flow meters						
System Flow	FM-1	3-5 LPM				3.7
O2 Analyzer	FM-2	1.2-1.7 LPM				1.7
NOx Analyzer	FM-3	1.2-1.7 LPM				1.8
NOX By-Pass	FM-4	1.2-1.7 LPM				1.9
CO Analyzer	FM-5	1.2-1.7 LPM				1.9
Cal Gas Flow (only during Calibration)	FM-6	> FM-1 & FM-7				3.5
System Flow	FM-7	3-5 LPM				1.7
NOX/NH3 Analyzer	FM-8	1.2-1.5 LPM				1.5
NOX/NH3 Analyzer By-Pass	FM-9	1.2-1.5 LPM				1.5
NOX Dry Air	FM-10	500-700 CCM				580
DAHs Checks						
Check DAHS for normal operation. Is system logging data?						✓
Check alarms in DAHS.						✓
Check chart recorder for normal operation						✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?						✓
REMARKS:						

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
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Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Time	Unit	Sub
10/24/16	10/25/16	10/24/16	10/24/16	10/23/16
Calibration Gas Pressures				
O2/CO High Span, NOX Zero	SV1	1202	1170	1150
NOX Low Span/CO Low Span	SV2	1810	1790	1770
NOX High Span, O2/CO Zero	SV3	420	390	370
Stack Sample Line	Please enter readings			
Sample Line Temperature	TC1	250	250	250
NH3 Converter Temperature	TC2	760	760	760
Sample Line Pressure/Vacuum	PI-1	6.5	6.9	6.9
Sample Line Pressure/Vacuum	PI-2	5.0	4.7	4.5
Sample Line Pressure/Vacuum	PI-4	6.5	6.7	6.0
Sample Line Pressure	PI-5	5.1	4.0	6.0
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2	✓	✓	✓
Visual Checks	Please enter readings			
Room enclosure temperature	Check HVAC controls	68.0	68.0	68.5
Moisture sensor A filter	MS-1	✓	✓	✓
Moisture sensor B filter	MS-2	✓	✓	✓
Sample pump operation (2)	MS-3	✓	✓	✓
Condensate drain pump	MS-4	✓	✓	✓
NH3 Scrubber drain	HV-4	✓	✓	✓
Flow meters	Please enter readings			
System Flow	FM-1	7.4	7.5	7.6
O2 Analyzer	FM-2	1.65	1.65	1.6
NOX Analyzer	FM-3	1.75	1.7	1.7
NOX By-Pass	FM-4	1.55	1.5	1.5
CO Analyzer	FM-5	1.7	1.7	1.7
Cal Gas Flow (only during Calibration)	FM-6	3.4	3.7	3.3
System Flow	FM-7	1.7	1.7	1.7
NOX/NH3 Analyzer	FM-8	1.55	1.5	1.55
NOX/NH3 Analyzer By-Pass	FM-9	570	570	570
NOX Dry Air	FM-10	570	570	570
DAHs Checks	Please enter readings			
Check DAHS for normal operation. Is system logging data?	✓	✓	✓	✓
Check alarms in DAHS	✓	✓	✓	✓
Check chart recorder for normal operation	✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?	✓	✓	✓	✓
REMARKS:				

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

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Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Inspector	Sum	Mon	Tue	Wed	Thu
Technician's Initial						
Calibration Gas Pressures						
O2/CO High Span, NOX Zero	10/21/16	11/11/16	11/21/16	11/21/16	11/21/16	11/21/16
NOX Low Span/CO Low Span	10/20	10/20	10/20	10/20	10/20	10/20
NOX High Span, O2/CO Zero	1430	1640	1640	1640	1640	1640
Stack Sample Line	280	280	280	280	280	280
Please enter readings						
SV1	>150 PSI	1020	1020	1020	1020	1020
SV2	>150 PSI	1430	1640	1640	1640	1640
SV3	>150 PSI	280	280	280	280	280
Please enter readings						
TC1	260°F (+/- 5° F)	250	250	250	250	250
TC2	780°F (+/- 5° C)	760	760	760	760	760
PI-1	< 10" Hg	6.3	6.4	6.5	6.6	6.7
PI-2	3-10 PSI	5.3	5.3	5.1	4.6	4.6
PI-4	< 10" Hg	6.3	6.3	6.6	6.6	6.6
PI-5	3-10 PSI	5.2	5.2	6.0	5.8	5.8
FS-1	3 LPM	✓	✓	✓	✓	✓
FS-2	3 LPM	✓	✓	✓	✓	✓
Verify functionality of Sample Pump A Flow Switch as necessary						
Verify functionality of Sample Pump B Flow Switch as necessary						
Visual Checks						
Room/enclosure temperature	72 F (+/- 5° F)	65.0	63.5	62.0	63.0	63.0
Check HVAC controls						
Moisture sensor A filter	MS-1	✓	✓	✓	✓	✓
Moisture sensor B filter	MS-2	✓	✓	✓	✓	✓
Sample pump operation (?)		✓	✓	✓	✓	✓
Condensate drain pump		✓	✓	✓	✓	✓
NH3 Scrubber drain		✓	✓	✓	✓	✓
Flow meters						
System Flow	3-5 LPM	4.7	4.7	4.7	4.7	4.6
O2 Analyzer	12-17 LPM	1.7	1.7	1.65	1.65	1.65
NOx Analyzer	12-17 LPM	1.75	1.75	1.75	1.7	1.7
NOx By-Pass	12-17 LPM	1.2	1.2	1.55	1.5	1.5
CO Analyzer	12-17 LPM	1.75	1.75	1.75	1.7	1.7
Cal Gas Flow (only during Calibration)	> FM-1 & FM-7	3.5	3.5	4.5	4.0	4.0
System Flow	3-5 LPM	1.7	1.7	1.6	1.5	1.5
NOX/NH3 Analyzer	12-1.5 LPM	1.55	1.55	1.5	1.4	1.4
NOX/NH3 Analyzer By-Pass	12-1.5 LPM	570	650	650	650	650
NOX Dry Air	500-700 COM	✓	✓	✓	✓	✓
Please enter readings						
DAHs Checks		✓	✓	✓	✓	✓
Check DAHS for normal operation. Is system logging data?		✓	✓	✓	✓	✓
Check alarms in DAHS.		✓	✓	✓	✓	✓
Check chart recorder for normal operation		✓	✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓	✓	✓	✓	✓
REMARKS:						

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required

Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Form emailed to: _____

Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Parameters to Check	Sun	Mon	Tue	Wed	Thurs	Fri	Sat
Date	4/11/16	4/12/16	4/13/16	4/14/16	4/15/16	4/16/16	4/17/16
Technician's Initial							
Calibration Gas Pressures	Please enter readings						
O2/CO High Span, NOX Zero	810	880	820	810	810	810	810
NOX Low Span/CO Low Span	1430	1520	1430	1410	1410	1410	1410
NOX High Span, O2/CO Zero	1730	1840	1740	1720	1720	1720	1720
Stack Sample Line	Please enter readings						
Sample Line Temperature	250	250	250	250	250	250	250
NH3 Converter Temperature	760	760	760	760	760	760	760
Sample Line Pressure/Vacuum	6.9	6.8	6.9	6.9	6.9	6.9	6.9
Sample Line Pressure/Vacuum	7.0	5.0	5.0	5.0	5.0	5.0	5.0
Sample Line Pressure/Vacuum	5.9	6.0	6.0	6.0	6.0	6.0	6.0
Sample Line Pressure	✓	✓	✓	✓	✓	✓	✓
Verify functionality of Sample Pump A Flow Switch as necessary	✓	✓	✓	✓	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary	✓	✓	✓	✓	✓	✓	✓
Visual Checks	Please enter readings						
Room/enclosure temperature	68.5	71.0	69.5	70.5	70.5	70.5	70.5
Check HVAC controls	✓	✓	✓	✓	✓	✓	✓
Moisture sensor A filter	MS-1	✓	✓	✓	✓	✓	✓
Moisture sensor B filter	MS-2	✓	✓	✓	✓	✓	✓
Sample pump operation (2)	✓	✓	✓	✓	✓	✓	✓
Condensate drain pump	✓	✓	✓	✓	✓	✓	✓
NH3 Scrubber drain	✓	✓	✓	✓	✓	✓	✓
Flow meters	Please enter readings						
System Flow	7.6	4.6	4.6	4.6	4.6	4.6	4.6
O2 Analyzer	1.65	1.65	1.65	1.65	1.65	1.65	1.65
NOX Analyzer	1.75	1.75	1.75	1.75	1.75	1.75	1.75
NOX By-Pass	1.55	1.55	1.55	1.55	1.55	1.55	1.55
CO Analyzer	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Cal Gas Flow (only during Calibration)	4.3	4.4	4.4	4.4	4.4	4.4	4.4
System Flow	1.45	1.5	1.4	1.4	1.4	1.4	1.4
NOX/NH3 Analyzer	1.4	1.4	1.4	1.4	1.4	1.4	1.4
NOX/NH3 Analyzer By-Pass	5.0	5.0	5.0	5.0	5.0	5.0	5.0
NOX Dry Air	Please enter readings						
DAHs Checks	✓	✓	✓	✓	✓	✓	✓
Check DAHS for normal operation, is system logging data?	✓	✓	✓	✓	✓	✓	✓
Check alarms in DAHS	✓	✓	✓	✓	✓	✓	✓
Check chart recorder for normal operation	✓	✓	✓	✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?	✓	✓	✓	✓	✓	✓	✓
REMARKS:							

Mark as either Acceptable "V", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.
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Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Mon	Tue	Wed	Thu	Fri	Sat
Technician's Initial						
Calibration Gas Pressures						
O2/CO High Span, NOX Zero	11/14/16	11/15/16	11/16/16	11/17/16	11/18/16	
NOX Low Span/CO Low Span	760	700	700	620	620	
NOX High Span, O2/CO Zero	1320	1280	1300	1170	1130	
Stack Sample Line	1430	1570	1410	1400	1500	
Sample Line Temperature	Please enter readings					
NH3 Converter Temperature	250	250	250	250	250	
Sample Line Pressure/Vacuum	741	760	760	760	760	
Sample Line Pressure/Vacuum	6.9	6.5	6.7	7.1	6.7	
Sample Line Pressure/Vacuum	4.9	5.0	4.8	4.3	4.8	
Sample Line Pressure/Vacuum	7.0	6.4	6.9	7.4	6.9	
Sample Line Pressure	5.9	5.4	5.4	5.2	6.0	
Verify functionality of Sample Pump A Flow Switch as necessary	✓	✓	✓	✓	✓	
Verify functionality of Sample Pump B Flow Switch as necessary	✓	✓	✓	✓	✓	
Visual Checks	Please enter readings					
Room/enclosure temperature	73.0	67.5	69.5	70.5	71	
Check HVAC controls	✓	✓	✓	✓	✓	
Moisture sensor A filter	MS-1	MS-2	MS-3	MS-4	MS-5	
Moisture sensor B filter	MS-1	MS-2	MS-3	MS-4	MS-5	
Sample pump operation (2)	MS-1	MS-2	MS-3	MS-4	MS-5	
Condensate drain pump	MS-1	MS-2	MS-3	MS-4	MS-5	
NH3 Scrubber drain	MS-1	MS-2	MS-3	MS-4	MS-5	
Flow meters	Please enter readings					
System Flow	4.6	4.6	4.6	4.5	4.6	
O2 Analyzer	1.65	1.65	1.65	1.65	1.65	
NOX Analyzer	1.75	1.75	1.75	1.75	1.75	
NOX By-Pass	1.55	1.4	1.55	1.45	1.55	
CO Analyzer	1.75	1.75	1.75	1.75	1.75	
Cal Gas Flow (only during Calibration)	4.4	4.9	4.4	4.1	4.7	
System Flow	1.5	1.45	1.5	1.45	1.5	
NOX/NH3 Analyzer	1.5	1.4	1.4	1.4	1.4	
NOX/NH3 Analyzer By-Pass	5.90	5.90	5.90	5.90	6.00	
NOX Dry Air	Please enter readings					
DAHs Checks	✓	✓	✓	✓	✓	
Check DAHS for normal operation. Is system logging data?	✓	✓	✓	✓	✓	
Check alarms in DAHS.	✓	✓	✓	✓	✓	
Check chart recorder for normal operation	✓	✓	✓	✓	✓	
Check calibration drift for all analyzers/monitors. Did all calibrations pass?	✓	✓	✓	✓	✓	
REMARKS:						

Mark as either Acceptable "A", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.
 Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Tag ID	Limit	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Please enter readings									
Technician's Initial									
Calibration Gas Pressures									
O2/CO High Span, NOX Zero	SV1	>150 PSI		510	460	940			
NOX Low Span/CO Low Span	SV2	>150 PSI		1070	570	940			
NOX High Span, O2/CO Zero	SV3	>150 PSI		1370	1300	1190			
Please enter readings									
Stack Sample Line									
Sample Line Temperature	TC1	250°F (+/-5°F)		250	250	250			
NH3 Converter Temperature	TC2	760°F (+/-5°C)		760	760	760			
Sample Line Pressure/Vacuum	PI-1	< 10" Hg		66	66	66			
Sample Line Pressure/Vacuum	PI-2	3-10 PSI		48	50	50			
Sample Line Pressure/Vacuum	PI-4	< 10" Hg		66	66	66			
Sample Line Pressure	PI-5	3-10 PSI		53	60	60			
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1	3 LPM		✓	✓	✓			
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2	3 LPM		✓	✓	✓			
Please enter readings									
Visual Checks									
Room/enclosure temperature	Check HVAC controls	72°F (+/-5°F)		69.0	67.5	68.0			
Moisture sensor A filter	MS-1	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.		✓	✓	✓			
Moisture sensor B filter	MS-2	Check if running OK		✓	✓	✓			
Sample pump operation (2)		Check if running OK		✓	✓	✓			
Condensate drain pump		Check if running OK		✓	✓	✓			
NH3 Scrubber drain	HV-4	Drain as needed		✓	✓	✓			
Please enter readings									
Flow meters									
System Flow	FM-1	3-5 LPM		4.6	4.6	4.6			
O2 Analyzer	FM-2	1.2-1.7 LPM		1.65	1.65	1.65			
NOX Analyzer	FM-3	1.2-1.7 LPM		1.75	1.75	1.75			
NOX By-Pass	FM-4	1.2-1.7 LPM		1.55	1.55	1.55			
CO Analyzer	FM-5	1.2-1.7 LPM		1.75	1.75	1.75			
Call Gas Flow (only during Calibration)	FM-6	> FM-1 & FM-7		4.4	4.4	4.4			
System Flow	FM-7	3-5 LPM		1.5	1.5	1.5			
NOX/NH3 Analyzer	FM-8	1.2-1.5 LPM		1.4	1.4	1.4			
NOX/NH3 Analyzer By-Pass	FM-9	1.2-1.5 LPM		1.4	1.4	1.4			
NOX Dry Air	FM-10	500-700 CCM		590	590	580			
Please enter readings									
DAHs Checks									
Check DAHS for normal operation, is system loading data?				✓	✓	✓			
Check alarms in DAHS				✓	✓	✓			
Check chart recorder for normal operation				✓	✓	✓			
Check calibration drift for all analyzers/monitors, Did all calibrations pass?				✓	✓	✓			
REMARKS:									

Mark as either Acceptable "A", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.
 Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS inspection

Parameters to Check	Units	Mon		Tue		Wed		Thu		Fri		Sat	
		11/28/16	11/29/16	11/29/16	11/30/16	12/01/16	12/02/16	12/03/16	12/04/16	12/05/16	12/06/16	12/07/16	12/08/16
Technician's Initial													
Calibration Gas Pressures													
O2/CO High Span, NOX Zero	>150 PSI	400	370	270	270	270	270	270	270	270	270	270	270
NOX Low Span/CO Low Span	>150 PSI	500	520	700	700	700	700	700	700	700	700	700	700
NOX High Span, O2/CO Zero	>150 PSI	1250	1180	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440
Stack Sample Line													
Sample Line Temperature	250°F (+/- 5°F)	250	250	250	250	250	250	250	250	250	250	250	250
NH3 Converter Temperature	760°F (+/- 5°C)	760	760	760	760	760	760	760	760	760	760	760	760
Sample Line Pressure/Vacuum	< 10" Hg	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Sample Line Pressure/Vacuum	3-10 PSI	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Sample Line Pressure	< 10" Hg	6.9	6.7	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Verify functionality of Sample Pump A Flow Switch as necessary	3-10 PSI	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Verify functionality of Sample Pump B Flow Switch as necessary	3 LPM	3	3	3	3	3	3	3	3	3	3	3	3
Visual Checks	3 LPM	3	3	3	3	3	3	3	3	3	3	3	3
Room/enclosure temperature	72°F (+/- 5°F)	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
Check HVAC controls													
Moisture sensor A filter	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Moisture sensor B filter		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sample pump operation (2)	Check if running OK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Condensate drain pump	Check if running OK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NH3 Scrubber drain	Drain as needed	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Flow meters													
System Flow	3-5 LPM	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
O2 Analyzer	1.2-1.7 LPM	1.45	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65
NOx Analyzer	1.2-1.7 LPM	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
NOX By-Pass	1.2-1.7 LPM	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
CO Analyzer	1.2-1.7 LPM	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Cal Gas Flow (only during Calibration)	> FM-1 & FM-7	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
System Flow	3-5 LPM	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
NOX/NH3 Analyzer	1.2-1.5 LPM	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
NOX/NH3 Analyzer By-Pass	1.2-1.5 LPM	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
NOX Dry Air	500-700 CCM	530	530	530	530	530	530	530	530	530	530	530	530
DAHS Checks													
Check DAHS for normal operation. Is system logging data?		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Check alarms in DAHS		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Check chart recorder for normal operation		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Check calibration cert for all analyzers/monitors. Did all calibrations pass?		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
REMARKS:													

Mark as either Acceptable "✓", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.

Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Tag ID	Mon	Tue	Wed	Thu	Fri	Sat
Date	12/16/16	12/16/16	12/16/16	12/16/16	12/16/16	12/16/16
Technician's Initial	SS	SS	SS	SS	SS	SS
Calibration Gas Pressures	Please enter readings					
O2/CO High Span, NOX Zero	1740	1780	1610	1580	1580	1580
NOX Low Span/CO Low Span	570	570	570	460	460	460
NOX High Span, O2/CO Zero	870	880	810	880	880	880
Stack Sample Line	Please enter readings					
Sample Line Temperature	250F	250	250	250	250	250
NH3 Converter Temperature	760	760	760	760	760	760
Sample Line Pressure/Vacuum	6.7	6.5	6.6	6.6	6.6	6.6
Sample Line Pressure/Vacuum	5.8	5.0	5.7	5.1	5.1	5.1
Sample Line Pressure/Vacuum	6.3	5.0	6.7	6.8	6.8	6.8
Sample Line Pressure	5.3	5.9	6.0	6.0	6.0	6.0
Verify functionality of Sample Pump A Flow Switch as necessary	✓	✓	✓	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary	✓	✓	✓	✓	✓	✓
Visual Checks	Please enter readings					
Room/closure temperature	61.5	70.3	61.5	70.5	70.5	70.5
Moisture sensor A filter	✓	✓	✓	✓	✓	✓
Moisture sensor B filter	✓	✓	✓	✓	✓	✓
Sample pump operation (2)	✓	✓	✓	✓	✓	✓
Condensate drain pump	✓	✓	✓	✓	✓	✓
NH3 Scrubber drain	✓	✓	✓	✓	✓	✓
Flow meters	Please enter readings					
System Flow	4.6	4.7	4.7	4.7	4.7	4.7
O2 Analyzer	1.65	1.7	1.7	1.7	1.7	1.7
NOX Analyzer	1.75	1.75	1.75	1.75	1.75	1.75
NOX By-Pass	1.6	1.6	1.65	1.6	1.6	1.6
CO Analyzer	1.75	1.75	1.75	1.75	1.75	1.75
Cal Gas Flow (only during Calibration)	4.4	4.4	4.4	4.4	4.4	4.4
System Flow	1.45	1.45	1.45	1.45	1.45	1.45
NOX/NH3 Analyzer	1.4	1.4	1.4	1.4	1.4	1.4
NOX/NH3 Analyzer By-Pass	52.0	52.0	52.0	52.0	52.0	52.0
NOX Dry Air	✓	✓	✓	✓	✓	✓
DAHs Checks	Please enter readings					
Check DAHS for normal operation. Is system logging data?	✓	✓	✓	✓	✓	✓
Check alarms in DAHS.	✓	✓	✓	✓	✓	✓
Check chart recorder for normal operation	✓	✓	✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?	✓	✓	✓	✓	✓	✓
REMARKS:						

Mark as either Acceptable "A", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.
 Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Inspector's Initials	Inspector's Name	Inspector's Title	Inspector's Phone	Inspector's Email	Inspector's Signature
02/13/16		RJH				
Technician's Initial						
Calibration Gas Pressures						
O2/CO High Span, NOX Zero	SV1	>150 PSI	1310	720	280	280
NOX Low Span/CO Low Span	SV2	>150 PSI	380	350	350	350
NOX High Span, O2/CO Zero	SV3	>150 PSI	720	710	640	640
Stack Sample Line						
Sample Line Temperature	TC1	250°F (+/- 5° F)	250	250	250	250
NH3 Converter Temperature	TC2	760°F (+/- 5° C)	760	760	760	760
Sample Line Pressure/Vacuum	PI-1	< 10" Hg	6.4	6.6	6.8	6.8
Sample Line Pressure/Vacuum	PI-2	3-10 PSI	5.4	4.0	4.3	4.3
Sample Line Pressure/Vacuum	PI-4	< 10" Hg	6.3	6.3	6.3	6.3
Sample Line Pressure	PI-5	3-10 PSI	6.0	6.0	5.3	5.3
Verify functionality of Sample Pump A Flow Switch as necessary	FS-1	3 LPM	✓	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary	FS-2	3 LPM	✓	✓	✓	✓
Visual Checks						
Room/enclosure temperature	Check HVAC controls	72° F (+/- 5° F)	68.0	68.5	71.0	71.0
Moisture sensor A filter	MS-1	Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.	✓	✓	✓	✓
Moisture sensor B filter	MS-2	Check if running OK	✓	✓	✓	✓
Sample pump operation (2)		Check if running OK	✓	✓	✓	✓
Condensate drain pump		Check if running OK	✓	✓	✓	✓
NH3 Scrubber drain	HV-4	Drain as needed	✓	✓	✓	✓
Flow meters						
System Flow	FM-1	3-5 LPM	4.7	4.6	4.6	4.6
O2 Analyzer	FM-2	1.2-1.7 LPM	1.7	1.65	1.65	1.65
NOx Analyzer	FM-3	1.2-1.7 LPM	1.75	1.75	1.75	1.75
NOX By-Pass	FM-4	1.2-1.7 LPM	1.6	1.6	1.6	1.6
CO Analyzer	FM-5	1.2-1.7 LPM	1.75	1.75	1.75	1.75
Cell Gas Flow (only during Calibration)	FM-6	> FM-1 & FM-7	4.5	4.5	4.5	4.5
System Flow	FM-7	3-5 LPM	4.5	4.5	4.5	4.5
NOX/NH3 Analyzer	FM-8	1.2-1.5 LPM	1.4	1.4	1.4	1.4
NOX/NH3 Analyzer By-Pass	FM-9	1.2-1.5 LPM	1.4	1.4	1.4	1.4
NOX Dry Air	FM-10	500-700 CCM	530	540	540	540
DAHs Checks						
Check DAHS for normal operation, is system logging data?			✓	✓	✓	✓
Check alarms in DAHS.			✓	✓	✓	✓
Check chart recorder for normal operation			✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?			✓	✓	✓	✓
REMARKS:						

Mark as either Acceptable "A", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.
 Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Parameters to Check	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Date	12/18/16	12/19/16	12/20/16	12/21/16	12/22/16	12/23/16	12/24/16
Technician's Initial	SS	SS	SS	SS	SS	SS	SS
Calibration Gas Pressures	Please enter readings						
O2/CO High Span, NOX Zero	110	105	110	105	110	105	110
NOX Low Span/CO Low Span	490	490	490	490	490	490	490
NOX High Span, O2/CO Zero	Please enter readings						
Stack Sample Line	Please enter readings						
Sample Line Temperature	250	250	250	250	250	250	250
NH3 Converter Temperature	760	760	760	760	760	760	760
Sample Line Pressure/Vacuum	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Sample Line Pressure/Vacuum	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Sample Line Pressure/Vacuum	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Sample Line Pressure	6.1	6.1	6.1	6.1	6.1	6.1	6.1
Verify functionality of Sample Pump A Flow Switch as necessary	✓	✓	✓	✓	✓	✓	✓
Verify functionality of Sample Pump B Flow Switch as necessary	✓	✓	✓	✓	✓	✓	✓
Visual Checks	Please enter readings						
Room/enclosure temperature	70.5	71.0	71.0	71.0	71.0	71.0	71.0
Check HVAC controls	72°F (+/- 5°F)						
Moisture sensor A filter	MS-1	✓	✓	✓	✓	✓	✓
Moisture sensor B filter	MS-2	✓	✓	✓	✓	✓	✓
Sample pump operation (2)	MS-3	✓	✓	✓	✓	✓	✓
Condensate drain pump	MS-4	✓	✓	✓	✓	✓	✓
NH3 Scrubber drain	MS-5	✓	✓	✓	✓	✓	✓
Flow meters	Please enter readings						
System Flow	FM-1	4.7	4.7	4.7	4.7	4.7	4.5
O2 Analyzer	FM-2	1.1	1.1	1.1	1.1	1.1	1.2
NOx Analyzer	FM-3	1.75	1.75	1.75	1.75	1.75	1.7
NOx By-Pass	FM-4	1.6	1.6	1.6	1.6	1.6	1.45
CO Analyzer	FM-5	1.75	1.75	1.75	1.75	1.75	1.7
Cell Gas Flow (only during Calibration)	FM-6	>	>	>	>	>	>
System Flow	FM-7	4.5	4.5	4.5	4.5	4.5	4.1
NOx/NH3 Analyzer	FM-8	1.5	1.5	1.5	1.5	1.5	1.45
NOx/NH3 Analyzer By-Pass	FM-9	1.4	1.4	1.4	1.4	1.4	1.4
NOx Dry Air	FM-10	6.50	6.50	6.50	6.50	6.50	6.40
DAHs Checks	Please enter readings						
Check DAHS for normal operation. Is system logging data?	✓	✓	✓	✓	✓	✓	✓
Check alarms in DAHS	✓	✓	✓	✓	✓	✓	✓
Check chart recorder for normal operation	✓	✓	✓	✓	✓	✓	✓
Check calibration drift for all analyzers/monitors. Did all calibrations pass?	✓	✓	✓	✓	✓	✓	✓
REMARKS:							

Mark as either Acceptable "A", Corrective action Required "X", or Actual Readings, where required
 Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS sheller log book.
 Form emailed to: _____ Date: _____

Barre / Center / Grapeland / Mira Loma / McGrath Peaker Generating Station
 Daily Quality Control/Quality Assurance Plan
 Checklist for CEMS Inspection

Date	Technician's Initial	Time	Weather	Temperature	Humidity	Wind	Pressure	Other
12/29/16	RL32/16	1:00						
Please enter readings								
SV1	>150 PSI	630						
SV2	>150 PSI	1300						
SV3	>150 PSI	1300						
Please enter readings								
TC1	250°F (+/- 5° F)	250						
TC2	760°F (+/- 5° C)	760						
PI-1	<10" Hg	6.6						
PI-2	3-10 PSI	6.0						
PI-4	<10" Hg	6.8						
PI-5	3-10 PSI	6.0						
FS-1	3 LPM	4.5						
FS-2	3 LPM	4.5						
Please enter readings								
Check HVAC controls	72° F (+/- 5° F)	76.0						
Clean and dry, if filter shows buildup and flow levels are dropping, replace filter.								
MS-1		✓						
Check if running OK								
MS-2		✓						
Check if running OK								
HV-4		✓						
Drain as needed								
Please enter readings								
Flow meters								
FM-1	3-5 LPM	4.7						
FM-2	1.2-1.7 LPM	1.7						
FM-3	1.2-1.7 LPM	1.6						
FM-4	1.2-1.7 LPM	1.75						
FM-5	1.2-1.7 LPM	1.6						
FM-6	> FM-1 & FM-7	1.75						
FM-7	3-5 LPM	4.5						
FM-8	1.2-1.5 LPM	1.45						
FM-9	1.2-1.5 LPM	1.35						
FM-10	500-700 CCM	530						
Please enter readings								
DAHS Checks								
Check DAHS for normal operation. Is system logging data?		✓						
Check alarms in DAHS.		✓						
Check chart recorder for normal operation		✓						
Check calibration drift for all analyzers/monitors. Did all calibrations pass?		✓						
REMARKS:								
Mark as either Acceptable "A", Corrective action Required "X", or Actual Readings, where required								
Note: All deficiencies must be reported to the Control Operator immediately. Corrective Action performed shall be logged in the CEMS shelter log book.								
Form emailed to: _____ Date: _____								

Attachment 3

CEMS calibration records

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Oxnard, CA 93035
Source: stack

Daily Stack Calibration Report
Generated: 1/31/2017

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Table with columns: Date, Time, Channel, Type, Actual Units, Diff Units, Error %, Units, Part60 Allowable, WD Error %, Units, Part75 Allowable, Gross MW, Process On, Bottle ID, Expire Date. Contains calibration data for various CO2 channels from 12/10/2016 to 11/14/2016.

Babcock & Wilcox Power Generation Group NetDMSO

Daily Stack Calibration Report
Generated: 1/31/2017

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Plant: McGrath Generating Station
Address: 251 N. Harbor Blvd.
City/St: Onward, CA 93035
Source: stack

Date	Time	Channel	Type	Target Units	Actual Units	Diff Units	Error %	Part60 Allowable Units	Part60 %	Part75 Allowable Units	Part75 %	Gross MW_5	Process On	Bottle ID	Expires Date
11/13/2016	16:48	COHIGH_5	CO ZERO	183.00	186.13	3.13	1.7	40.00	20.0	PASS	0	49.1	100.0 %	XCO189188	2/2/2024
11/13/2016	17:16	COHIGH_5	CO ZERO	183.00	184.60	1.60	0.9	40.00	20.0	PASS	0	49.7	100.0 %	XCO189188	2/2/2024
11/14/2016	16:16	COHIGH_5	CO ZERO	183.00	185.06	2.06	1.1	40.00	20.0	PASS	0	49.1	100.0 %	XCO189188	2/2/2024
11/08/2016	16:16	COHIGH_5	CO ZERO	183.00	185.06	2.06	1.1	40.00	20.0	PASS	0	51.0	100.0 %	XCO189188	2/2/2024
11/07/2016	06:01	COHIGH_5	CO ZERO	183.00	184.77	1.77	1.0	40.00	20.0	PASS	0	51.1	100.0 %	XCO189188	2/2/2024
11/06/2016	04:46	COHIGH_5	CO ZERO	183.00	185.31	2.31	1.2	40.00	20.0	PASS	0	49.5	100.0 %	XCO189188	2/2/2024
11/05/2016	17:02	COHIGH_5	CO ZERO	183.00	184.36	1.36	0.7	40.00	20.0	PASS	0	0.0	0.0 %	XCO189188	2/2/2024
11/04/2016	06:02	COHIGH_5	CO ZERO	183.00	185.31	2.31	1.2	40.00	20.0	PASS	0	0.0	0.0 %	XCO189188	2/2/2024
11/03/2016	05:31	COHIGH_5	CO ZERO	183.00	184.96	1.96	1.1	40.00	20.0	PASS	0	49.8	100.0 %	XCO189188	2/2/2024
11/03/2016	05:31	COHIGH_5	CO ZERO	183.00	185.30	2.30	1.2	40.00	20.0	PASS	0	0.0	0.0 %	XCO189188	2/2/2024
11/02/2016	14:52	COHIGH_5	CO ZERO	183.00	185.30	2.30	1.2	40.00	20.0	PASS	0	0.0	0.0 %	XCO189188	2/2/2024
11/02/2016	08:07	COHIGH_5	CO ZERO	183.00	185.04	2.04	1.1	40.00	20.0	PASS	0	0.0	0.0 %	XCO189188	2/2/2024
10/30/2016	10:00	COHIGH_5	CO ZERO	183.00	184.66	1.66	0.9	40.00	20.0	PASS	0	49.1	100.0 %	XCO189188	2/2/2024
10/29/2016	16:15	COHIGH_5	CO ZERO	183.00	184.77	1.77	1.0	40.00	20.0	PASS	0	49.1	100.0 %	XCO189188	2/2/2024
10/28/2016	09:15	COHIGH_5	CO ZERO	183.00	184.77	1.77	1.0	40.00	20.0	PASS	0	49.1	100.0 %	XCO189188	2/2/2024
10/27/2016	09:15	COHIGH_5	CO ZERO	183.00	185.02	2.02	1.1	40.00	20.0	PASS	0	49.1	100.0 %	XCO189188	2/2/2024
10/26/2016	05:45	COHIGH_5	CO ZERO	183.00	185.31	2.31	1.2	40.00	20.0	PASS	0	0.0	0.0 %	XCO189188	2/2/2024
10/26/2016	06:00	COHIGH_5	CO ZERO	183.00	184.82	1.82	1.0	40.00	20.0	PASS	0	0.0	0.0 %	XCO189188	2/2/2024
10/25/2016	06:00	COHIGH_5	CO ZERO	183.00	184.82	1.82	1.0	40.00	20.0	PASS	0	0.0	0.0 %	XCO189188	2/2/2024
10/24/2016	06:00	COHIGH_5	CO ZERO	183.00	184.68	1.68	0.9	40.00	20.0	PASS	0	49.2	100.0 %	XCO189188	2/2/2024
10/23/2016	17:02	COHIGH_5	CO ZERO	183.00	184.77	1.77	1.0	40.00	20.0	PASS	0	0.0	0.0 %	XCO189188	2/2/2024
10/22/2016	16:45	COHIGH_5	CO ZERO	183.00	184.82	1.82	1.0	40.00	20.0	PASS	0	0.0	0.0 %	XCO189188	2/2/2024
10/21/2016	12:00	COHIGH_5	CO ZERO	183.00	185.33	2.33	1.2	40.00	20.0	PASS	0	0.0	0.0 %	XCO189188	2/2/2024
10/21/2016	06:16	COHIGH_5	CO ZERO	183.00	183.79	0.79	0.4	40.00	20.0	PASS	0	48.9	100.0 %	XCO189188	2/2/2024
10/20/2016	09:16	COHIGH_5	CO ZERO	183.00	184.12	1.12	0.6	40.00	20.0	PASS	0	49.5	100.0 %	XCO189188	2/2/2024
10/19/2016	17:01	COHIGH_5	CO ZERO	183.00	184.10	1.10	0.6	40.00	20.0	PASS	0	48.9	100.0 %	XCO189188	2/2/2024
10/19/2016	17:16	COHIGH_5	CO ZERO	183.00	184.36	1.36	0.7	40.00	20.0	PASS	0	48.7	100.0 %	XCO189188	2/2/2024
10/18/2016	16:42	COHIGH_5	CO ZERO	183.00	184.36	1.36	0.7	40.00	20.0	PASS	0	48.7	100.0 %	XCO189188	2/2/2024
10/17/2016	17:46	COHIGH_5	CO ZERO	183.00	183.94	0.94	0.5	40.00	20.0	PASS	0	48.7	100.0 %	XCO189188	2/2/2024
10/17/2016	17:46	COHIGH_5	CO ZERO	183.00	183.94	0.94	0.5	40.00	20.0	PASS	0	48.7	100.0 %	XCO189188	2/2/2024

Daily Stack Calibration Report
Generated: 1/31/2017

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Oxnard, CA 93035
Source: stack

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Date	Time	Channel	Type	Target Units	Actual Units	Diff Units	Error %	Part60 Allowable Units	Part60 Allowable %	WD Error %	Units	Part75 Allowable %	Gross MW_5 MW	Process On	Bottle ID	Expire Date
10/16/2016	17:16	COHIGH_5	CO	183.00	184.20	1.20	0.31	40.00	20.0	PASS	-	N/A	48.9	100.0 %	CC277291	2/1/2024
10/16/2016	17:16	COHIGH_5	CO	183.00	184.20	1.20	0.6	40.00	20.0	PASS	-	N/A	48.9	100.0 %	CC277291	2/1/2024
10/15/2016	18:01	COHIGH_5	CO	183.00	183.00	0.00	0.25	40.00	20.0	PASS	-	N/A	48.7	100.0 %	CC277291	2/1/2024
10/15/2016	18:01	COHIGH_5	CO	183.00	184.44	1.44	0.7	40.00	20.0	PASS	-	N/A	48.7	100.0 %	CC277291	2/1/2024
10/14/2016	17:18	COHIGH_5	CO	183.00	183.95	0.95	0.27	40.00	20.0	PASS	-	N/A	49.1	100.0 %	CC277291	2/1/2024
10/14/2016	17:18	COHIGH_5	CO	183.00	183.95	0.95	0.5	40.00	20.0	PASS	-	N/A	49.1	100.0 %	CC277291	2/1/2024
10/13/2016	17:01	COHIGH_5	CO	183.00	183.48	0.48	0.1	40.00	20.0	PASS	-	N/A	49.2	100.0 %	CC277291	2/1/2024
10/13/2016	17:01	COHIGH_5	CO	183.00	183.48	0.48	0.1	40.00	20.0	PASS	-	N/A	49.2	100.0 %	CC277291	2/1/2024
10/13/2016	11:02	COHIGH_5	CO	183.00	183.74	0.74	0.1	40.00	20.0	PASS	-	N/A	0.0	0.0 %	CC277291	2/1/2024
10/13/2016	17:16	COHIGH_5	CO	183.00	183.74	0.74	0.1	40.00	20.0	PASS	-	N/A	0.0	0.0 %	CC277291	2/1/2024
10/10/2016	17:16	COHIGH_5	CO	183.00	184.58	1.58	0.8	40.00	20.0	PASS	-	N/A	49.1	100.0 %	CC277291	2/1/2024
10/09/2016	17:01	COHIGH_5	CO	183.00	183.16	0.16	0.1	40.00	20.0	PASS	-	N/A	48.7	100.0 %	CC277291	2/1/2024
10/08/2016	18:03	COHIGH_5	CO	183.00	183.16	0.16	0.1	40.00	20.0	PASS	-	N/A	48.7	100.0 %	CC277291	2/1/2024
10/08/2016	18:03	COHIGH_5	CO	183.00	183.38	0.38	0.2	40.00	20.0	PASS	-	N/A	48.5	100.0 %	CC277291	2/1/2024
10/07/2016	09:49	COHIGH_5	CO	183.00	183.41	0.41	0.1	40.00	20.0	PASS	-	N/A	0.0	0.0 %	CC277291	2/1/2024
10/07/2016	09:49	COHIGH_5	CO	183.00	183.41	0.41	0.2	40.00	20.0	PASS	-	N/A	0.0	0.0 %	CC277291	2/1/2024
10/06/2016	18:03	COHIGH_5	CO	183.00	181.40	-1.60	-0.8	40.00	20.0	PASS	-	N/A	49.0	100.0 %	CC277291	2/1/2024
10/04/2016	12:44	COHIGH_5	CO	183.00	182.28	-0.72	-0.4	40.00	20.0	PASS	-	N/A	0.0	0.0 %	CC277291	2/1/2024
10/01/2016	18:00	COHIGH_5	CO	183.00	182.56	-0.44	-0.4	40.00	20.0	PASS	-	N/A	48.4	100.0 %	CC277291	2/1/2024
09/30/2016	17:01	COHIGH_5	CO	183.00	181.58	-1.42	-0.7	40.00	20.0	PASS	-	N/A	48.6	100.0 %	CC277291	2/1/2024
09/29/2016	15:40	COHIGH_5	CO	183.00	181.58	-1.42	-0.7	40.00	20.0	PASS	-	N/A	48.6	100.0 %	CC277291	2/1/2024
09/29/2016	12:16	COHIGH_5	CO	183.00	181.58	-1.42	-0.7	40.00	20.0	PASS	-	N/A	48.5	100.0 %	CC277291	2/1/2024
09/28/2016	15:15	COHIGH_5	CO	183.00	181.58	-1.42	-0.7	40.00	20.0	PASS	-	N/A	0.0	0.0 %	CC277291	2/1/2024
09/28/2016	15:15	COHIGH_5	CO	183.00	181.58	-1.42	-0.7	40.00	20.0	PASS	-	N/A	0.0	0.0 %	CC277291	2/1/2024
09/26/2016	13:40	COHIGH_5	CO	183.70	183.09	-0.61	-0.3	40.00	20.0	PASS	-	N/A	46.9	100.0 %	CC277291	2/1/2024
09/26/2016	13:40	COHIGH_5	CO	183.70	182.45	-1.25	-0.6	40.00	20.0	PASS	-	N/A	48.1	100.0 %	CC277291	2/1/2024
09/24/2016	18:02	COHIGH_5	CO	183.70	182.00	-1.70	-0.9	40.00	20.0	PASS	-	N/A	48.8	100.0 %	CC277291	2/1/2024
09/22/2016	11:21	COHIGH_5	CO	183.70	182.00	-1.70	-0.9	40.00	20.0	PASS	-	N/A	0.0	0.0 %	CC277291	2/1/2024
09/22/2016	11:21	COHIGH_5	CO	183.70	182.21	-1.49	-0.7	40.00	20.0	PASS	-	N/A	0.0	0.0 %	CC277291	2/1/2024
09/19/2016	17:01	COHIGH_5	CO	183.70	181.56	-2.14	-1.1	40.00	20.0	PASS	-	N/A	48.4	100.0 %	CC277291	2/1/2024
09/19/2016	17:01	COHIGH_5	CO	183.70	181.56	-2.14	-1.1	40.00	20.0	PASS	-	N/A	48.4	100.0 %	CC277291	2/1/2024
09/18/2016	17:01	COHIGH_5	CO	183.70	181.50	-2.20	-1.1	40.00	20.0	PASS	-	N/A	48.7	100.0 %	CC277291	2/1/2024
09/17/2016	18:32	COHIGH_5	CO	183.70	181.68	-2.02	-1.0	40.00	20.0	PASS	-	N/A	48.8	100.0 %	CC277291	2/1/2024
09/16/2016	12:06	COHIGH_5	CO	183.70	181.68	-2.02	-1.0	40.00	20.0	PASS	-	N/A	0.0	0.0 %	CC277291	2/1/2024
09/16/2016	12:06	COHIGH_5	CO	183.70	181.27	-2.43	-1.2	40.00	20.0	PASS	-	N/A	0.0	0.0 %	CC277291	2/1/2024
09/09/2016	18:01	COHIGH_5	CO	183.70	179.88	-3.82	-1.9	40.00	20.0	PASS	-	N/A	49.0	100.0 %	CC277291	2/1/2024
09/09/2016	11:48	COHIGH_5	CO	183.70	183.39	0.69	0.3	40.00	20.0	PASS	-	N/A	0.0	0.0 %	CC277291	2/1/2024
09/08/2016	11:48	COHIGH_5	CO	183.70	183.39	0.69	0.3	40.00	20.0	PASS	-	N/A	0.0	0.0 %	CC277291	2/1/2024

Daily Stack Calibration Report
Generated: 1/31/2017

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Oxnard, CA 93035
Source: stack

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Table with columns: Date, Time, Channel, Type, Target Units, Actual Units, Diff Units, Error %, Units, Part60 Allowable, WD Error, Units, Part75 Allowable, Gross MW, Process On, Bottle ID, Expire Date.

Daily Stack Calibration Report
Generated: 1/31/2017

Company: McCath Generating Station
Plant: 251 N Harbor Blvd.
City/State: Oxnard, CA 93035
Source: stack

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Table with columns: Date, Time, Channel, Type, Target Units, Actual Units, Diff Units, Error %, Units, Part60 Allowable, MD Error %, Units, Part75 Allowable, Gross Wt, Process On, Bottle ID, Expire Date. The table contains multiple rows of calibration data for various channels and dates.

Babcock & Wilcox Power Generation Group NetDMS®

Daily Stack Calibration Report
Generated: 1/31/2017

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St.: Oxnard, CA 93035
Source: stack

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60/140CFR75)

Table with columns: Date, Time, Channel, Type, Target Units, Actual Units, Diff Units, Error %, Units, Part60 Allowable, WD Error %, Units, Part75 Allowable, Gross WM_5 MW, Process On, Bottle ID, Expire Date. Contains multiple rows of calibration data for various pollutants and parameters.

Daily Stack Calibration Report
Generated: 1/31/2017

Company: McGrath Generating Station
Plant: 251 N Harbor Blvd.
City/St: Oxnard, CA 93035
Source: stack

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Table with columns: Date, Time, Channel, Type, Target Units, Actual Units, Bluff Units, Error %, Units, Part60 Allowable, MD Error %, Units, Part75 Allowable, Gross MW, Process On, Bottle ID, Expiry Date. Contains calibration data for various CO2 and CO2L channels across multiple dates in 2016.

Company: McGeath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Oxnard, CA 93035
Source: stack

Daily Stack Calibration Report
Generated: 1/31/2017

Revised Start: 1/1/2016
Revised End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Table with columns: Date, Time, Channel, Type, Target Units, Actual Units, Diff Units, Error %, Part60 Allowable, MD Error, Units, Part75 Allowable, Gross MW, Process, Bottle ID, Expire Date. Contains 32 data rows.

Babcock & Wilcox Power Generation Group NetDAXIS

Daily Stack Calibration Report
Generated: 1/31/2017

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Oxnard, CA 93035
Source: stack

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Table with columns: Date, Time, Channel, Type, Target Units, Actual Units, Diff Units, Error %, Units, Part60 Allowable, MD Error %, Units, Part75 Allowable, Gross Wt_5 Mf, Process On, Bottle ID, Expire Date. Contains multiple rows of calibration data for CO2, CO, and SO2.

Daily Stack Calibration Report

Generated: 1/31/2017

Company: McDeath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Oxnard, CA 93035
Source: stack

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Table with columns: Date, Time, Channel, Type, Target Units, Actual Units, Diff Units, Error %, Units, Part60 Allowable, MD Error %, Units, Part75 Allowable, Gross MW_5, Process On, Bottle ID, Expire Date. Rows represent daily calibration data for various pollutants like CO, NOx, and SO2.

Daily Stack Calibration Report
Generated: 1/31/2017

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Camden, CA 95003
Source: Stack

Date	Time	Channel	Type	Target Units	Actual Units	Diff Units	Error %	Units	Part60 Allowable %	WD Error %	Units	Part75 Allowable %	Gross MW	Process On	Expire Date
11/06/2016	04:46	NOX_NH3H_5	NOX ZERO	0.00	0.10	0.10	0.00	20.00	10.0	PASS	0	N/A	51.1	100.0 %	3/22/2024
11/06/2016	04:46	NOX_NH3H_5	NOX ZERO	182.80	181.39	-1.41	-0.7	20.00	10.0	PASS	0	N/A	49.5	100.0 %	3/22/2024
11/06/2016	04:46	NOX_NH3H_5	NOX ZERO	0.00	0.11	0.11	0.1	20.00	10.0	PASS	0	N/A	0.0	0.0 %	3/22/2024
11/05/2016	17:02	NOX_NH3H_5	NOX ZERO	182.80	181.41	-1.39	-0.7	20.00	10.0	PASS	0	N/A	0.0	0.0 %	3/22/2024
11/05/2016	06:02	NOX_NH3H_5	NOX ZERO	0.00	0.09	0.09	0.0	20.00	10.0	PASS	0	N/A	49.8	100.0 %	3/22/2024
11/04/2016	06:02	NOX_NH3H_5	NOX ZERO	182.80	181.68	-1.12	-0.6	20.00	10.0	PASS	0	N/A	0.0	0.0 %	3/22/2024
11/04/2016	06:02	NOX_NH3H_5	NOX ZERO	0.00	0.09	0.09	0.0	20.00	10.0	PASS	0	N/A	0.0	0.0 %	3/22/2024
11/03/2016	05:31	NOX_NH3H_5	NOX ZERO	182.80	181.67	-1.13	-0.6	20.00	10.0	PASS	0	N/A	0.0	0.0 %	3/22/2024
11/03/2016	05:31	NOX_NH3H_5	NOX ZERO	0.00	0.11	0.11	0.1	20.00	10.0	PASS	0	N/A	49.1	100.0 %	3/22/2024
11/02/2016	14:52	NOX_NH3H_5	NOX ZERO	182.80	181.93	-0.87	-0.4	20.00	10.0	PASS	0	N/A	49.1	100.0 %	3/22/2024
11/02/2016	09:07	NOX_NH3H_5	NOX ZERO	0.00	0.09	0.09	0.0	20.00	10.0	PASS	0	N/A	49.1	100.0 %	3/22/2024
11/02/2016	09:07	NOX_NH3H_5	NOX ZERO	182.80	182.12	-0.68	-0.3	20.00	10.0	PASS	0	N/A	0.0	0.0 %	3/22/2024
10/30/2016	10:00	NOX_NH3H_5	NOX ZERO	182.80	182.85	0.05	0.1	20.00	10.0	PASS	0	N/A	0.0	0.0 %	3/22/2024
10/30/2016	10:00	NOX_NH3H_5	NOX ZERO	0.00	0.11	0.11	0.2	20.00	10.0	PASS	0	N/A	49.1	100.0 %	3/22/2024
10/28/2016	16:15	NOX_NH3H_5	NOX ZERO	182.50	182.42	-0.08	0.0	20.00	10.0	PASS	0	N/A	49.1	100.0 %	3/22/2024
10/28/2016	09:15	NOX_NH3H_5	NOX ZERO	0.00	0.11	0.11	0.1	20.00	10.0	PASS	0	N/A	49.1	100.0 %	3/22/2024
10/27/2016	05:45	NOX_NH3H_5	NOX ZERO	182.50	182.57	0.07	0.0	20.00	10.0	PASS	0	N/A	49.1	100.0 %	3/22/2024
10/27/2016	05:45	NOX_NH3H_5	NOX ZERO	0.00	0.10	0.10	0.1	20.00	10.0	PASS	0	N/A	0.0	0.0 %	3/22/2024
10/26/2016	06:00	NOX_NH3H_5	NOX ZERO	182.50	183.05	0.55	0.3	20.00	10.0	PASS	0	N/A	0.0	0.0 %	3/22/2024
10/25/2016	06:00	NOX_NH3H_5	NOX ZERO	0.00	0.09	0.09	0.0	20.00	10.0	PASS	0	N/A	49.2	100.0 %	3/22/2024
10/25/2016	06:00	NOX_NH3H_5	NOX ZERO	182.50	183.49	0.99	0.5	20.00	10.0	PASS	0	N/A	0.0	0.0 %	3/22/2024
10/24/2016	06:00	NOX_NH3H_5	NOX ZERO	0.00	0.09	0.09	0.0	20.00	10.0	PASS	0	N/A	49.0	100.0 %	3/22/2024
10/24/2016	06:00	NOX_NH3H_5	NOX ZERO	182.50	183.43	0.93	0.5	20.00	10.0	PASS	0	N/A	0.0	0.0 %	3/22/2024
10/23/2016	17:02	NOX_NH3H_5	NOX ZERO	0.00	0.10	0.10	0.1	20.00	10.0	PASS	0	N/A	49.5	100.0 %	3/22/2024
10/22/2016	16:45	NOX_NH3H_5	NOX ZERO	182.50	182.77	0.27	0.1	20.00	10.0	PASS	0	N/A	0.0	0.0 %	3/22/2024
10/22/2016	16:45	NOX_NH3H_5	NOX ZERO	0.00	0.19	0.19	0.1	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/21/2016	12:00	NOX_NH3H_5	NOX ZERO	182.50	182.40	-0.10	-0.1	20.00	10.0	PASS	0	N/A	49.5	100.0 %	3/22/2024
10/21/2016	12:00	NOX_NH3H_5	NOX ZERO	0.00	0.11	0.11	0.1	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/21/2016	06:16	NOX_NH3H_5	NOX ZERO	182.50	182.44	-0.06	0.0	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/20/2016	17:01	NOX_NH3H_5	NOX ZERO	182.50	177.45	-4.05	-2.1	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/19/2016	17:16	NOX_NH3H_5	NOX ZERO	0.00	0.11	0.11	0.1	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/19/2016	17:16	NOX_NH3H_5	NOX ZERO	182.50	178.22	-4.28	-2.1	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/18/2016	16:42	NOX_NH3H_5	NOX ZERO	0.00	0.09	0.09	0.0	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/18/2016	16:42	NOX_NH3H_5	NOX ZERO	182.50	178.25	-4.25	-2.1	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/17/2016	17:46	NOX_NH3H_5	NOX ZERO	0.00	0.10	0.10	0.1	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/17/2016	17:46	NOX_NH3H_5	NOX ZERO	0.00	0.09	0.09	0.0	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/16/2016	17:16	NOX_NH3H_5	NOX ZERO	182.50	177.89	-4.61	-2.3	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/16/2016	18:01	NOX_NH3H_5	NOX ZERO	0.00	0.10	0.10	0.1	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/15/2016	17:18	NOX_NH3H_5	NOX ZERO	182.50	178.36	-4.14	-2.1	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/14/2016	17:18	NOX_NH3H_5	NOX ZERO	0.00	0.11	0.11	0.1	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/14/2016	17:18	NOX_NH3H_5	NOX ZERO	182.50	178.30	-4.20	-2.1	20.00	10.0	PASS	0	N/A	48.9	100.0 %	3/22/2024
10/13/2016	17:01	NOX_NH3H_5	NOX ZERO	0.00	0.11	0.11	0.1	20.00	10.0	PASS	0	N/A	49.2	100.0 %	3/22/2024
10/13/2016	17:01	NOX_NH3H_5	NOX ZERO	182.50	178.78	-3.72	-1.9	20.00	10.0	PASS	0	N/A	49.2	100.0 %	3/22/2024

Company: McGrath Generating Station
Plant: 231 N. Harbor Blvd.
City/St: Newark, CA 93033
Source: Steam

Daily Stack Calibration Report
Generated: 1/31/2017

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Table with columns: Date, Time, Channel, Type, Target Units, Actual Units, Diff Units, Error %, Units, Part60 Allowable %, Units, MD Error %, Units, Part75 Allowable %, Units, Gross MW, Process On, Bottle ID, Expire Date. The table contains multiple rows of calibration data for various channels and dates.

Daily Stack Calibration Report
Generated: 1/31/2017

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Oxnard, CA 93035
Source: stack

Table with columns: Date, Time, Channel, Type, Target, Actual, Diff, Error, Units, Part60 Allowable, MD Error, Units, Part75 Allowable, Gross MW, Process, MW, Bottle ID, Expire Date. The table contains 100 rows of calibration data for NOx_NH3L_5.

Daily Stack Calibration Report
Generated: 1/31/2017

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Onnard, CA 93035
Source: stack
Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60/(40CFR75))

Table with columns: Date, Time, Channel, Type, Target Units, Actual Units, Diff Units, Error %, Units, Part60 Allowable %, Part75 Allowable %, Gross MW, Process On, Bottle ID, Expire Date. Rows list calibration data for various pollutants (NOx, SO2, etc.) over time.

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Onard, CA 93035
Source: stack

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Date	Time	Channel	Type	Target	Actual	Diff	Error %	Units	Part60 Allowable	WD Error	Units	Part75 Allowable	Gross MW	Process	On	Bottle ID	Expire Date
10/01/2016	18:00	NOXHIGH 5	NOX	182.50	183.53	1.03	0.5	20.00	10.00	0.0	10.00	5.0	48.4	100.0 %	100.0 %	CC277291	2/1/2024
10/01/2016	18:00	NOXHIGH 5	NOX	182.50	183.53	1.03	0.5	20.00	10.00	0.0	10.00	5.0	48.4	100.0 %	100.0 %	CC277291	2/1/2024
09/30/2016	17:01	NOXHIGH 5	ZERO	0.00	0.00	0.00	0.0	20.00	10.00	0.0	10.00	5.0	48.6	100.0 %	100.0 %	CC277291	2/1/2024
09/29/2016	15:40	NOXHIGH 5	NOX	182.50	183.62	1.12	0.6	20.00	10.00	0.0	10.00	5.0	48.5	100.0 %	100.0 %	CC277291	2/1/2024
09/29/2016	15:40	NOXHIGH 5	NOX	182.50	183.68	1.18	0.6	20.00	10.00	0.0	10.00	5.0	48.5	100.0 %	100.0 %	CC277291	2/1/2024
09/29/2016	12:16	NOXHIGH 5	NOX	182.50	183.74	1.24	0.6	20.00	10.00	0.0	10.00	5.0	46.9	100.0 %	100.0 %	CC277291	2/1/2024
09/29/2016	15:15	NOXHIGH 5	NOX	182.50	183.36	0.86	0.4	20.00	10.00	0.0	10.00	5.0	48.1	100.0 %	100.0 %	CC277291	2/1/2024
09/26/2016	13:40	NOXHIGH 5	NOX	182.50	183.31	0.81	0.4	20.00	10.00	0.0	10.00	5.0	48.1	100.0 %	100.0 %	CC277291	2/1/2024
09/24/2016	18:02	NOXHIGH 5	NOX	182.50	183.37	0.87	0.4	20.00	10.00	0.0	10.00	5.0	48.0	100.0 %	100.0 %	CC277291	2/1/2024
09/22/2016	11:21	NOXHIGH 5	NOX	182.50	183.66	1.16	0.6	20.00	10.00	0.0	10.00	5.0	48.4	100.0 %	100.0 %	CC277291	2/1/2024
09/19/2016	17:01	NOXHIGH 5	NOX	182.50	183.48	0.98	0.5	20.00	10.00	0.0	10.00	5.0	48.4	100.0 %	100.0 %	CC277291	2/1/2024
09/18/2016	17:01	NOXHIGH 5	NOX	182.50	183.20	0.70	0.4	20.00	10.00	0.0	10.00	5.0	48.7	100.0 %	100.0 %	CC277291	2/1/2024
09/17/2016	18:32	NOXHIGH 5	NOX	182.50	183.42	0.92	0.5	20.00	10.00	0.0	10.00	5.0	48.8	100.0 %	100.0 %	CC277291	2/1/2024
09/16/2016	12:06	NOXHIGH 5	NOX	182.50	183.46	0.96	0.5	20.00	10.00	0.0	10.00	5.0	49.0	100.0 %	100.0 %	CC277291	2/1/2024
09/16/2016	16:06	NOXHIGH 5	NOX	182.50	183.62	1.12	0.6	20.00	10.00	0.0	10.00	5.0	49.0	100.0 %	100.0 %	CC277291	2/1/2024
09/09/2016	18:01	NOXHIGH 5	NOX	182.50	183.62	1.12	0.6	20.00	10.00	0.0	10.00	5.0	49.0	100.0 %	100.0 %	CC277291	2/1/2024
09/08/2016	11:48	NOXHIGH 5	NOX	182.50	183.98	1.48	0.7	20.00	10.00	0.0	10.00	5.0	48.3	100.0 %	100.0 %	CC277291	2/1/2024
09/06/2016	13:04	NOXHIGH 5	NOX	182.50	183.39	0.89	0.4	20.00	10.00	0.0	10.00	5.0	48.3	100.0 %	100.0 %	CC277291	2/1/2024
09/01/2016	09:32	NOXHIGH 5	NOX	182.50	183.87	1.37	0.7	20.00	10.00	0.0	10.00	5.0	48.5	100.0 %	100.0 %	CC277291	2/1/2024
08/31/2016	15:18	NOXHIGH 5	NOX	182.50	183.28	0.78	0.4	20.00	10.00	0.0	10.00	5.0	48.3	100.0 %	100.0 %	CC277291	2/1/2024
08/30/2016	18:03	NOXHIGH 5	NOX	182.50	182.96	0.46	0.2	20.00	10.00	0.0	10.00	5.0	48.3	100.0 %	100.0 %	CC277291	2/1/2024
08/25/2016	08:33	NOXHIGH 5	NOX	182.50	182.50	0.00	0.0	20.00	10.00	0.0	10.00	5.0	48.3	100.0 %	100.0 %	CC277291	2/1/2024
08/25/2016	08:33	NOXHIGH 5	NOX	182.50	182.99	0.49	0.2	20.00	10.00	0.0	10.00	5.0	48.3	100.0 %	100.0 %	CC277291	2/1/2024
08/18/2016	19:31	NOXHIGH 5	NOX	182.50	182.89	0.39	0.2	20.00	10.00	0.0	10.00	5.0	48.6	100.0 %	100.0 %	CC277291	2/1/2024
08/17/2016	18:02	NOXHIGH 5	NOX	182.50	182.92	0.42	0.2	20.00	10.00	0.0	10.00	5.0	48.6	100.0 %	100.0 %	CC277291	2/1/2024
08/17/2016	11:02	NOXHIGH 5	NOX	182.50	182.92	0.42	0.2	20.00	10.00	0.0	10.00	5.0	48.6	100.0 %	100.0 %	CC277291	2/1/2024
08/14/2016	19:12	NOXHIGH 5	NOX	182.50	182.82	0.32	0.2	20.00	10.00	0.0	10.00	5.0	48.0	100.0 %	100.0 %	CC277291	2/1/2024
08/14/2016	19:16	NOXHIGH 5	NOX	182.50	182.82	0.32	0.2	20.00	10.00	0.0	10.00	5.0	48.0	100.0 %	100.0 %	CC277291	2/1/2024
08/12/2016	16:03	NOXHIGH 5	NOX	182.50	183.08	0.58	0.3	20.00	10.00	0.0	10.00	5.0	48.1	100.0 %	100.0 %	CC277291	2/1/2024
08/11/2016	17:01	NOXHIGH 5	NOX	182.50	183.08	0.58	0.3	20.00	10.00	0.0	10.00	5.0	48.4	100.0 %	100.0 %	CC277291	2/1/2024
08/11/2016	17:01	NOXHIGH 5	NOX	182.50	183.66	1.16	0.6	20.00	10.00	0.0	10.00	5.0	48.4	100.0 %	100.0 %	CC277291	2/1/2024

Daily Stack Calibration Report
Generated: 1/31/2017

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St.: Oxnard, CA 93035
Source: stack

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Date	Time	Channel	Type	Target Units	Actual Units	Diff Units	Error %	Units	Part60 Allowable %	WD Error %	Units	Part75 Allowable %	Gross MM_5 MW	Process Cn	Botlle_ID	Expire Date
02/09/2016	16:58	NOKHIGH_5	NOK	0.00	0.04	0.04	0.0	20.00	10.0	PASS	0	10.00	49.1	100.0 %	EB0061677	11/6/2023
02/09/2016	16:58	NOKHIGH_5	NOK	183.00	183.03	0.03	0.0	20.00	10.0	PASS	0	10.00	49.1	100.0 %	EB0061677	11/6/2023
02/09/2016	16:58	NOKHIGH_5	NOK	0.00	0.03	0.03	0.0	20.00	10.0	PASS	0	10.00	47.5	100.0 %	EB0061677	11/6/2023
02/08/2016	16:58	NOKHIGH_5	NOK	183.00	182.92	-0.08	0.0	20.00	10.0	PASS	0	10.00	48.7	100.0 %	EB0061677	11/6/2023
02/07/2016	18:08	NOKHIGH_5	NOK	183.00	183.19	0.19	0.1	20.00	10.0	PASS	0	10.00	50.0	100.0 %	EB0061677	11/6/2023
02/07/2016	18:08	NOKHIGH_5	NOK	183.00	183.19	0.19	0.1	20.00	10.0	PASS	0	10.00	50.0	100.0 %	EB0061677	11/6/2023
02/06/2016	18:10	NOKHIGH_5	NOK	183.00	184.12	1.12	0.6	20.00	10.0	PASS	0	10.00	47.2	100.0 %	EB0061677	11/6/2023
02/05/2016	07:13	NOKHIGH_5	NOK	183.00	184.54	1.54	0.8	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
02/04/2016	19:28	NOKHIGH_5	NOK	183.00	184.39	1.39	0.8	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
02/04/2016	19:28	NOKHIGH_5	NOK	183.00	184.39	1.39	0.8	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
02/04/2016	08:13	NOKHIGH_5	NOK	183.00	184.39	1.39	0.8	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
02/03/2016	06:00	NOKHIGH_5	NOK	183.00	184.43	1.43	0.7	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
02/02/2016	05:54	NOKHIGH_5	NOK	183.00	183.79	0.79	0.4	20.00	10.0	PASS	0	10.00	50.0	100.0 %	EB0061677	11/6/2023
02/02/2016	05:54	NOKHIGH_5	NOK	183.00	183.49	0.49	0.2	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
02/01/2016	05:59	NOKHIGH_5	NOK	183.00	182.80	-0.20	-0.1	20.00	10.0	PASS	0	10.00	50.5	100.0 %	EB0061677	11/6/2023
01/31/2016	10:29	NOKHIGH_5	NOK	183.00	182.78	-0.22	-0.1	20.00	10.0	PASS	0	10.00	49.7	100.0 %	EB0061677	11/6/2023
01/29/2016	06:15	NOKHIGH_5	NOK	183.00	183.29	0.29	0.1	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
01/28/2016	12:27	NOKHIGH_5	NOK	183.00	183.19	0.19	0.1	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
01/28/2016	06:59	NOKHIGH_5	NOK	183.00	183.57	0.57	0.3	20.00	10.0	PASS	0	10.00	50.2	100.0 %	EB0061677	11/6/2023
01/27/2016	06:12	NOKHIGH_5	NOK	183.00	183.66	0.66	0.3	20.00	10.0	PASS	0	10.00	50.2	100.0 %	EB0061677	11/6/2023
01/26/2016	06:58	NOKHIGH_5	NOK	183.00	183.61	0.61	0.3	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
01/25/2016	18:28	NOKHIGH_5	NOK	183.00	183.17	0.17	0.1	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
01/23/2016	18:58	NOKHIGH_5	NOK	183.00	182.99	-0.01	0.0	20.00	10.0	PASS	0	10.00	50.0	100.0 %	EB0061677	11/6/2023
01/23/2016	17:55	NOKHIGH_5	NOK	183.00	183.10	0.10	0.0	20.00	10.0	PASS	0	10.00	49.8	100.0 %	EB0061677	11/6/2023
01/22/2016	16:41	NOKHIGH_5	NOK	183.00	182.99	-0.01	0.0	20.00	10.0	PASS	0	10.00	49.9	100.0 %	EB0061677	11/6/2023
01/21/2016	16:41	NOKHIGH_5	NOK	183.00	183.10	0.10	0.0	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
01/21/2016	17:40	NOKHIGH_5	NOK	183.00	183.21	0.21	0.1	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
01/21/2016	11:57	NOKHIGH_5	NOK	183.00	183.19	0.19	0.1	20.00	10.0	PASS	0	10.00	50.0	100.0 %	EB0061677	11/6/2023
01/20/2016	17:49	NOKHIGH_5	NOK	183.00	183.19	0.19	0.1	20.00	10.0	PASS	0	10.00	50.0	100.0 %	EB0061677	11/6/2023
01/20/2016	17:49	NOKHIGH_5	NOK	183.00	183.21	0.21	0.1	20.00	10.0	PASS	0	10.00	50.2	100.0 %	EB0061677	11/6/2023
01/19/2016	06:58	NOKHIGH_5	NOK	183.00	183.31	0.31	0.2	20.00	10.0	PASS	0	10.00	50.2	100.0 %	EB0061677	11/6/2023
01/18/2016	08:30	NOKHIGH_5	NOK	183.00	183.51	0.51	0.3	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
01/17/2016	17:43	NOKHIGH_5	NOK	183.00	183.18	0.18	0.1	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023
01/17/2016	17:43	NOKHIGH_5	NOK	183.00	183.18	0.18	0.1	20.00	10.0	PASS	0	10.00	50.1	100.0 %	EB0061677	11/6/2023

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Oxnard, CA 93035
Source: stack

Daily Stack Calibration Report
Generated: 1/31/2017

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Table with columns: Date, Time, Channel, Type, Target Units, Actual Units, Diff Units, Error %, Units, Part60 Allowable, WD Error %, Units, Part75 Allowable, Gross MW_5, Process On, Bottle ID, Expire Date. Contains multiple rows of calibration data for NOx and SPAN types across various channels and dates.

Babcock & Wilcox Power Generation Group NetData

Daily Stack Calibration Report
Generated: 1/31/2017

Company: Mocrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Canard, CA 95035
Source: Stack

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Table with columns: Date, Time, Channel, Type, Target Units, Actual Units, Diff Units, Error, Units, Part60 Allowable, Units, Part75 Allowable, Units, Gross MM_5 MW, Process On, Bottle ID, Expiry Date. Contains calibration data for various NOx and SO2 channels from 09/29/2016 to 08/05/2016.

Babcock & Wilcox Power Generation Group NetDMASE

Daily Stack Calibration Report
Generated: 1/31/2017

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Oxnard, CA 93035
Source: stack

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Date	Time	Chart#	Units	Target	Actual	Diff	Error %	Units	Part60 Allowable	WD Error	Units	Part75 Allowable	Gross MW	Process	Bottle ID	Expire Date
02/29/2016	07:00	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	50.0	100.0 %	CC279944	12/22/2023
02/29/2016	07:13	NOKLOW_5	NOX	SPAN	8.71	-0.36	-3.6	1.00	10.0	PASS	-4.0	5.0	49.2	100.0 %	CC279944	12/22/2023
02/28/2016	17:59	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.2	100.0 %	CC279944	12/22/2023
02/28/2016	17:59	NOKLOW_5	NOX	SPAN	8.76	-0.31	-3.1	1.00	10.0	PASS	-3.0	5.0	49.2	100.0 %	CC279944	12/22/2023
02/27/2016	18:02	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.2	100.0 %	CC279944	12/22/2023
02/27/2016	18:02	NOKLOW_5	NOX	SPAN	8.93	-0.14	-1.4	1.00	10.0	PASS	-1.0	5.0	49.2	100.0 %	CC279944	12/22/2023
02/26/2016	18:17	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.2	100.0 %	CC279944	12/22/2023
02/26/2016	18:17	NOKLOW_5	NOX	SPAN	8.96	-0.11	-1.1	1.00	10.0	PASS	-1.0	5.0	49.2	100.0 %	CC279944	12/22/2023
02/25/2016	18:16	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/25/2016	18:16	NOKLOW_5	NOX	SPAN	8.92	-0.15	-1.5	1.00	10.0	PASS	-1.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/24/2016	17:56	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/24/2016	17:56	NOKLOW_5	NOX	SPAN	8.97	-0.18	-1.8	1.00	10.0	PASS	-2.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/24/2016	11:14	NOKLOW_5	NOX	ZERO	0.00	0.02	0.2	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/24/2016	11:14	NOKLOW_5	NOX	SPAN	8.97	-0.10	-1.0	1.00	10.0	PASS	-1.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/23/2016	06:43	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/23/2016	06:43	NOKLOW_5	NOX	SPAN	8.96	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/22/2016	05:55	NOKLOW_5	NOX	ZERO	0.00	0.01	0.1	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/22/2016	05:55	NOKLOW_5	NOX	SPAN	8.96	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/21/2016	18:11	NOKLOW_5	NOX	ZERO	0.00	0.05	0.5	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/21/2016	18:11	NOKLOW_5	NOX	SPAN	8.96	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/20/2016	18:07	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/20/2016	18:07	NOKLOW_5	NOX	SPAN	8.96	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/19/2016	18:14	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/19/2016	18:14	NOKLOW_5	NOX	SPAN	8.96	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/18/2016	13:05	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/18/2016	13:05	NOKLOW_5	NOX	SPAN	8.96	-0.10	-1.0	1.00	10.0	PASS	-1.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/17/2016	18:14	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/17/2016	18:14	NOKLOW_5	NOX	SPAN	8.97	-0.09	-0.9	1.00	10.0	PASS	-1.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/16/2016	06:13	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/16/2016	06:13	NOKLOW_5	NOX	SPAN	8.86	-0.10	-1.0	1.00	10.0	PASS	-1.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/16/2016	06:11	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/16/2016	06:11	NOKLOW_5	NOX	SPAN	8.90	-0.06	-0.6	1.00	10.0	PASS	-1.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/15/2016	16:58	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/15/2016	16:58	NOKLOW_5	NOX	SPAN	8.82	-0.14	-1.4	1.00	10.0	PASS	-1.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/14/2016	18:13	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/14/2016	18:13	NOKLOW_5	NOX	SPAN	8.81	-0.15	-1.5	1.00	10.0	PASS	-1.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/13/2016	16:58	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/13/2016	16:58	NOKLOW_5	NOX	SPAN	8.96	-0.03	-0.3	1.00	10.0	PASS	-1.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/12/2016	06:09	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/12/2016	06:09	NOKLOW_5	NOX	SPAN	8.99	0.03	0.3	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/11/2016	17:57	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/11/2016	17:57	NOKLOW_5	NOX	SPAN	8.99	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/11/2016	12:30	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/11/2016	12:30	NOKLOW_5	NOX	SPAN	9.01	0.05	0.5	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/10/2016	18:13	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/10/2016	18:13	NOKLOW_5	NOX	SPAN	9.03	0.07	0.7	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/09/2016	16:58	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/09/2016	16:58	NOKLOW_5	NOX	SPAN	8.94	-0.02	-0.2	1.00	10.0	PASS	-1.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/08/2016	16:58	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/08/2016	16:58	NOKLOW_5	NOX	SPAN	8.95	-0.01	-0.1	1.00	10.0	PASS	-1.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/08/2016	16:58	NOKLOW_5	NOX	ZERO	0.00	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023
02/08/2016	16:58	NOKLOW_5	NOX	SPAN	8.96	0.00	0.00	1.00	10.0	PASS	0.0	5.0	49.1	100.0 %	CC279944	12/22/2023

Babcock & Wilcox Power Generation Group Netdhsge

Period Start: 1/1/2016
Period End: 12/31/2016
Daily (40CFR60)/(40CFR75)

Daily Stack Calibration Report
Generated: 1/31/2017

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Onnard, CA 93035
Source: stack

Table with columns: Date, Time, Channel, Type, Target, Actual, Diff, Error, Units, Part60 Allowable, MD Error, Units, Part75 Allowable, Gross MW, Process, Bottle ID, Expire Date. Contains 50 rows of calibration data for various SO2 and CO2 analyzers.

Daily Stack Calibration Report
Generated: 1/31/2017

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St.: Oxnard, CA 93035
Source: stack

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR95)

Date	Time	Channel	Type	Target Units	Actual Units	Diff Units	Error %	Units	Part60 Allowable %	WD Error %	Units	Part75 Allowable %	Units	Gross MM_5 WM	Process On	Bottle ID	Expire Date
01/14/2016	10:00	NOKLOW_5	NOK	8.96	9.01	0.01	0.1	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	BB00BL977	1/16/2023
01/14/2016	10:00	NOKLOW_5	SPAN	8.96	9.01	0.05	0.5	1.00	10.0	PASS	0	5.00	5.00	49.6	100.0 %	CC11700	8/23/2023
01/13/2016	18:30	NOKLOW_5	NOK	8.76	8.71	-0.05	-0.5	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	CC277151	8/23/2018
01/13/2016	18:30	NOKLOW_5	SPAN	8.76	8.71	-0.05	-0.5	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	CC277151	8/23/2018
01/12/2016	07:40	NOKLOW_5	NOK	8.76	8.74	-0.02	-0.2	1.00	10.0	PASS	0	5.00	5.00	50.3	100.0 %	CC400491	8/26/2023
01/12/2016	07:40	NOKLOW_5	SPAN	8.76	8.74	-0.02	-0.2	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	CC277151	8/23/2018
01/11/2016	06:57	NOKLOW_5	NOK	8.76	8.74	-0.02	-0.2	1.00	10.0	PASS	0	5.00	5.00	50.1	100.0 %	CC400491	8/26/2023
01/11/2016	06:57	NOKLOW_5	SPAN	8.76	8.74	-0.02	-0.2	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	CC277151	8/23/2018
01/10/2016	17:49	NOKLOW_5	NOK	8.76	8.71	-0.05	-0.5	1.00	10.0	PASS	0	5.00	5.00	49.6	100.0 %	CC400491	8/26/2023
01/10/2016	17:49	NOKLOW_5	SPAN	8.76	8.71	-0.05	-0.5	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	CC277151	8/23/2018
01/09/2016	18:14	NOKLOW_5	NOK	8.76	8.72	-0.04	-0.4	1.00	10.0	PASS	0	5.00	5.00	49.9	100.0 %	CC400491	8/26/2023
01/09/2016	18:14	NOKLOW_5	SPAN	8.76	8.72	-0.04	-0.4	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	CC277151	8/23/2018
01/08/2016	18:13	NOKLOW_5	NOK	8.76	8.71	-0.05	-0.5	1.00	10.0	PASS	0	5.00	5.00	50.6	100.0 %	CC400491	8/26/2023
01/08/2016	18:13	NOKLOW_5	SPAN	8.76	8.71	-0.05	-0.5	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	CC277151	8/23/2018
01/06/2016	13:13	NOKLOW_5	NOK	8.76	8.71	-0.05	-0.5	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	CC400491	8/26/2023
01/06/2016	13:13	NOKLOW_5	SPAN	8.76	8.71	-0.05	-0.5	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	CC277151	8/23/2018
01/05/2016	15:30	NOKLOW_5	NOK	8.76	8.76	0.00	0.0	1.00	10.0	PASS	0	5.00	5.00	50.8	100.0 %	CC400491	8/26/2023
01/05/2016	15:30	NOKLOW_5	SPAN	8.76	8.76	0.00	0.0	1.00	10.0	PASS	0	5.00	5.00	49.9	100.0 %	CC277151	8/23/2018
01/04/2016	12:29	NOKLOW_5	NOK	8.76	8.66	-0.10	-1.1	1.00	10.0	PASS	0	5.00	5.00	50.4	100.0 %	CC400491	8/26/2023
01/04/2016	12:29	NOKLOW_5	SPAN	8.76	8.66	-0.10	-1.1	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	CC277151	8/23/2018
01/04/2016	06:52	NOKLOW_5	NOK	8.76	8.65	-0.11	-1.1	1.00	10.0	PASS	0	5.00	5.00	49.9	100.0 %	CC400491	8/26/2023
01/04/2016	06:52	NOKLOW_5	SPAN	8.76	8.65	-0.11	-1.1	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	CC277151	8/23/2018
01/03/2016	16:47	NOKLOW_5	NOK	8.76	8.64	-0.12	-1.2	1.00	10.0	PASS	0	5.00	5.00	50.5	100.0 %	CC400491	8/26/2023
01/03/2016	16:47	NOKLOW_5	SPAN	8.76	8.64	-0.12	-1.2	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	CC277151	8/23/2018
01/01/2016	17:44	NOKLOW_5	NOK	8.76	8.67	-0.09	-0.9	1.00	10.0	PASS	0	5.00	5.00	50.5	100.0 %	CC400491	8/26/2023
01/01/2016	17:44	NOKLOW_5	SPAN	8.76	8.67	-0.09	-0.9	1.00	10.0	PASS	0	5.00	5.00	0.0	0.0 %	CC277151	8/23/2018
12/30/2016	09:33	O2_5	O2	0.00	0.17	0.17	-N/A	2.00	N/A	PASS	0	1.00	N/A	50.6	100.0 %	CC155990	6/16/2024
12/30/2016	09:33	O2_5	SPAN	0.00	0.17	0.17	-N/A	2.00	N/A	PASS	0	1.00	N/A	0.0	0.0 %	CC45937	6/16/2024
12/28/2016	19:01	O2_5	O2	22.50	22.28	-0.22	-0.9	2.00	N/A	PASS	0	1.00	N/A	50.6	100.0 %	CC155990	6/16/2024
12/28/2016	19:01	O2_5	SPAN	22.50	22.17	-0.33	-1.4	2.00	N/A	PASS	0	1.00	N/A	0.0	0.0 %	CC45937	6/16/2024
12/27/2016	17:46	O2_5	O2	22.50	22.17	-0.33	-1.4	2.00	N/A	PASS	0	1.00	N/A	50.6	100.0 %	CC155990	6/16/2024
12/27/2016	17:46	O2_5	SPAN	22.50	22.34	-0.16	-0.7	2.00	N/A	PASS	0	1.00	N/A	0.0	0.0 %	CC45937	6/16/2024
12/26/2016	07:17	O2_5	O2	22.50	22.36	-0.14	-0.6	2.00	N/A	PASS	0	1.00	N/A	50.7	100.0 %	CC155990	6/16/2024
12/26/2016	07:17	O2_5	SPAN	22.50	22.33	-0.17	-0.8	2.00	N/A	PASS	0	1.00	N/A	0.0	0.0 %	CC45937	6/16/2024
12/25/2016	17:16	O2_5	O2	22.50	22.15	-0.35	-1.5	2.00	N/A	PASS	0	1.00	N/A	50.6	100.0 %	CC155990	6/16/2024
12/24/2016	17:48	O2_5	O2	22.50	22.15	-0.35	-1.5	2.00	N/A	PASS	0	1.00	N/A	0.0	0.0 %	CC45937	6/16/2024
12/23/2016	13:21	O2_5	O2	22.50	22.25	-0.25	-1.1	2.00	N/A	PASS	0	1.00	N/A	51.0	100.0 %	CC155990	6/16/2024
12/23/2016	13:21	O2_5	SPAN	22.50	22.33	-0.17	-0.8	2.00	N/A	PASS	0	1.00	N/A	0.0	0.0 %	CC45937	6/16/2024
12/23/2016	08:31	O2_5	O2	22.50	22.26	-0.24	-1.0	2.00	N/A	PASS	0	1.00	N/A	50.7	100.0 %	CC155990	6/16/2024
12/23/2016	17:46	O2_5	O2	22.50	22.26	-0.24	-1.0	2.00	N/A	PASS	0	1.00	N/A	0.0	0.0 %	CC45937	6/16/2024
12/22/2016	17:01	O2_5	O2	22.50	22.25	-0.25	-1.1	2.00	N/A	PASS	0	1.00	N/A	50.4	100.0 %	CC155990	6/16/2024
12/22/2016	17:01	O2_5	SPAN	22.50	22.26	-0.24	-1.0	2.00	N/A	PASS	0	1.00	N/A	0.0	0.0 %	CC45937	6/16/2024
12/21/2016	19:01	O2_5	O2	22.50	22.17	-0.33	-1.4	2.00	N/A	PASS	0	1.00	N/A	50.3	100.0 %	CC155990	6/16/2024
12/20/2016	19:01	O2_5	O2	22.50	22.17	-0.33	-1.4	2.00	N/A	PASS	0	1.00	N/A	0.0	0.0 %	CC45937	6/16/2024
12/20/2016	18:01	O2_5	O2	22.50	22.14	-0.36	-1.6	2.00	N/A	PASS	0	1.00	N/A	50.4	100.0 %	CC155990	6/16/2024
12/19/2016	18:01	O2_5	O2	22.50	22.14	-0.36	-1.6	2.00	N/A	PASS	0	1.00	N/A	0.0	0.0 %	CC45937	6/16/2024
12/19/2016	18:01	O2_5	O2	22.50	22.45	-0.05	-0.2	2.00	N/A	PASS	0	1.00	N/A	50.4	100.0 %	CC155990	6/16/2024

Company: McGrath Generating Station
 Plant: 251 N. Harbor Blvd.
 City/St.: Camarillo, CA 93035
 Source: stack

Daily Stack Calibration Report
 generated: 1/31/2017

Period Start: 1/1/2016
 Period End: 12/31/2016
 Included Calibrations: Daily (40CFR60)/(40CFR75)

Date	Time	Channel	Type	Target Units	Actual Units	Diff Units	Error %	Units	Part60 Allowable	WD Error	%	Units	Part75 Allowable	%	Units	Process On	Gross MW	MW	Bottle ID	Expire Date
12/18/2016	18:03	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.6	100.0	XC0189188	3/22/2024
12/18/2016	18:03	02_5	SPAN	22.50	22.46	-0.04	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.9	100.0	CC165890	6/6/2024
12/16/2016	19:03	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.9	100.0	XC0189188	3/22/2024
12/16/2016	19:03	02_5	SPAN	22.50	22.25	-0.25	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.2	100.0	CC165890	6/6/2024
12/15/2016	17:46	02_5	ZERO	0.00	0.18	0.18	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.2	100.0	XC0189188	3/22/2024
12/15/2016	17:46	02_5	SPAN	22.50	22.25	-0.25	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.2	100.0	CC165890	6/6/2024
12/15/2016	18:36	02_5	ZERO	0.00	0.18	0.18	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	XC0189188	3/22/2024
12/15/2016	18:36	02_5	SPAN	22.50	22.29	-0.21	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	CC165890	6/6/2024
12/14/2016	17:31	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.7	100.0	XC0189188	3/22/2024
12/14/2016	17:31	02_5	SPAN	22.50	22.34	-0.16	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.7	100.0	CC165890	6/6/2024
12/14/2016	08:34	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.7	100.0	XC0189188	3/22/2024
12/14/2016	08:34	02_5	SPAN	22.50	22.38	-0.12	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.7	100.0	CC165890	6/6/2024
12/12/2016	17:02	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.6	100.0	XC0189188	3/22/2024
12/12/2016	17:02	02_5	SPAN	22.50	22.33	-0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.6	100.0	CC165890	6/6/2024
12/11/2016	17:02	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	XC0189188	3/22/2024
12/11/2016	17:02	02_5	SPAN	22.50	22.33	-0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	CC165890	6/6/2024
12/10/2016	17:03	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.6	100.0	XC0189188	3/22/2024
12/10/2016	17:03	02_5	SPAN	22.50	22.34	-0.16	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.6	100.0	CC165890	6/6/2024
12/09/2016	17:48	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	XC0189188	3/22/2024
12/09/2016	17:48	02_5	SPAN	22.50	22.38	-0.12	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	CC165890	6/6/2024
12/08/2016	17:01	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.6	100.0	XC0189188	3/22/2024
12/08/2016	17:01	02_5	SPAN	22.50	22.43	-0.07	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.6	100.0	CC165890	6/6/2024
12/07/2016	17:03	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	XC0189188	3/22/2024
12/07/2016	17:03	02_5	SPAN	22.50	22.34	-0.16	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	CC165890	6/6/2024
12/06/2016	17:31	02_5	ZERO	0.00	0.16	0.16	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	XC0189188	3/22/2024
12/06/2016	17:31	02_5	SPAN	22.50	22.25	-0.25	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	CC165890	6/6/2024
12/05/2016	06:46	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.8	100.0	XC0189188	3/22/2024
12/05/2016	06:46	02_5	SPAN	22.50	22.25	-0.25	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.8	100.0	CC165890	6/6/2024
12/04/2016	17:47	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	XC0189188	3/22/2024
12/04/2016	17:47	02_5	SPAN	22.50	22.25	-0.25	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	CC165890	6/6/2024
12/03/2016	17:01	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	XC0189188	3/22/2024
12/03/2016	17:01	02_5	SPAN	22.50	22.32	-0.18	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	CC165890	6/6/2024
12/02/2016	17:48	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	XC0189188	3/22/2024
12/02/2016	17:48	02_5	SPAN	22.50	22.34	-0.16	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	CC165890	6/6/2024
12/02/2016	12:43	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.8	100.0	XC0189188	3/22/2024
12/02/2016	12:43	02_5	SPAN	22.50	22.37	-0.13	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.8	100.0	CC165890	6/6/2024
12/01/2016	09:31	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.1	100.0	XC0189188	3/22/2024
12/01/2016	09:31	02_5	SPAN	22.50	22.28	-0.22	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.1	100.0	CC42593	2/2/2024
11/30/2016	06:46	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.8	100.0	XC0189188	3/22/2024
11/30/2016	06:46	02_5	SPAN	22.50	22.35	-0.15	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.8	100.0	CC42593	2/2/2024
11/28/2016	17:16	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	49.6	100.0	XC0189188	3/22/2024
11/28/2016	17:16	02_5	SPAN	22.50	22.17	-0.33	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	49.7	100.0	CC42593	2/2/2024
11/27/2016	17:48	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	XC0189188	3/22/2024
11/27/2016	17:48	02_5	SPAN	22.50	22.25	-0.25	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	50.5	100.0	CC42593	2/2/2024
11/25/2016	17:01	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	49.8	100.0	XC0189188	3/22/2024
11/25/2016	17:01	02_5	SPAN	22.50	22.36	-0.14	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	49.8	100.0	CC42593	2/2/2024
11/21/2016	18:01	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	0.0	0.0	XC0189188	3/22/2024
11/21/2016	18:01	02_5	SPAN	22.50	22.28	-0.22	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	0.0	0.0	CC42593	2/2/2024
11/23/2016	12:18	02_5	ZERO	0.00	0.17	0.17	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	0.0	0.0	XC0189188	3/22/2024
11/23/2016	12:18	02_5	SPAN	22.50	22.27	-0.23	-N/A	-	-	0	-	N/A	-	1.00	-	100.0	0.0	0.0	CC42593	2/2/2024

Babcock & Wilcox Power Generation Group NetDMS

Daily Stack Calibration Report
Generated: 1/31/2017

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Onward, CA 93035
Source: stack

Date	Time	Channel	Type	Target Units	Actual Units	Diff Units	Error %	Part60 Allowable Units	WD Error %	Part75 Allowable Units	Process On	Gross MM_5 MW	Bottle ID	Expire Date
11/20/2016	20:27	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	0.0	0.0	XC018918B	3/22/2024
11/20/2016	20:27	02_5	ZERO	22.50	22.25	-0.25	-N/A -	2.00	0	1.00	PASS	50.0	CC42593	2/2/2024
11/20/2016	17:31	02_5	SPAN	0.00	2.45	2.45	-N/A -	2.00	0	1.00	PASS	50.0	CC42593	2/2/2024
11/20/2016	17:31	02_5	SPAN	22.50	22.24	-0.26	-N/A -	2.00	0	1.00	FAIL	50.0	CC42593	2/2/2024
11/20/2016	18:46	02_5	ZERO	0.00	1.86	1.86	-N/A -	2.00	1	1.00	WARN	49.9	CC42593	2/2/2024
11/20/2016	18:46	02_5	ZERO	22.50	22.24	-0.26	-N/A -	2.00	0	1.00	FAIL	49.9	CC42593	2/2/2024
11/20/2016	17:03	02_5	ZERO	0.00	0.77	0.77	-N/A -	2.00	0	1.00	PASS	50.1	CC42593	2/2/2024
11/19/2016	17:03	02_5	ZERO	22.50	22.31	-0.19	-N/A -	2.00	0	1.00	PASS	50.0	CC42593	2/2/2024
11/17/2016	07:46	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	50.0	CC42593	2/2/2024
11/17/2016	07:46	02_5	ZERO	22.50	22.32	-0.18	-N/A -	2.00	0	1.00	PASS	49.3	CC42593	2/2/2024
11/16/2016	17:46	02_5	SPAN	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	49.6	CC42593	2/2/2024
11/15/2016	17:16	02_5	SPAN	22.50	22.16	-0.34	-N/A -	2.00	0	1.00	PASS	49.6	CC42593	2/2/2024
11/15/2016	17:16	02_5	SPAN	22.00	22.00	0.00	-N/A -	2.00	0	1.00	PASS	49.2	CC42593	2/2/2024
11/13/2016	18:46	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	49.1	CC42593	2/2/2024
11/13/2016	18:46	02_5	ZERO	22.50	22.33	-0.17	-N/A -	2.00	0	1.00	PASS	49.1	CC42593	2/2/2024
11/13/2016	18:48	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	49.1	CC42593	2/2/2024
11/13/2016	17:16	02_5	SPAN	22.50	22.34	-0.16	-N/A -	2.00	0	1.00	PASS	49.7	CC42593	2/2/2024
11/10/2016	17:16	02_5	SPAN	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	49.1	CC42593	2/2/2024
11/08/2016	16:16	02_5	ZERO	22.50	22.30	-0.20	-N/A -	2.00	0	1.00	PASS	49.1	CC42593	2/2/2024
11/08/2016	16:16	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	49.1	CC42593	2/2/2024
11/07/2016	06:01	02_5	SPAN	22.50	22.32	-0.18	-N/A -	2.00	0	1.00	PASS	51.0	CC42593	2/2/2024
11/06/2016	06:01	02_5	SPAN	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	51.0	CC42593	2/2/2024
11/06/2016	04:46	02_5	ZERO	22.50	22.36	-0.14	-N/A -	2.00	0	1.00	PASS	51.1	CC42593	2/2/2024
11/06/2016	04:46	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	49.8	CC42593	2/2/2024
11/05/2016	17:02	02_5	SPAN	22.50	22.33	-0.17	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
11/05/2016	17:02	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
11/04/2016	06:02	02_5	SPAN	22.50	22.30	-0.20	-N/A -	2.00	0	1.00	PASS	49.8	CC42593	2/2/2024
11/04/2016	06:02	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	49.8	CC42593	2/2/2024
11/03/2016	05:31	02_5	ZERO	22.50	22.34	-0.16	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
11/03/2016	05:31	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
11/02/2016	14:52	02_5	ZERO	22.50	22.35	-0.15	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
11/02/2016	08:07	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
10/30/2016	18:00	02_5	ZERO	22.50	22.37	-0.13	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
10/29/2016	18:00	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
10/28/2016	16:11	02_5	SPAN	22.50	22.39	-0.11	-N/A -	2.00	0	1.00	PASS	49.1	CC42593	2/2/2024
10/28/2016	09:11	02_5	SPAN	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	49.1	CC42593	2/2/2024
10/26/2016	09:15	02_5	ZERO	22.50	22.33	-0.17	-N/A -	2.00	0	1.00	PASS	49.1	CC42593	2/2/2024
10/27/2016	05:45	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	49.1	CC42593	2/2/2024
10/27/2016	05:45	02_5	ZERO	22.50	22.27	-0.23	-N/A -	2.00	0	1.00	PASS	49.1	CC42593	2/2/2024
10/26/2016	06:00	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
10/26/2016	06:00	02_5	ZERO	22.50	22.28	-0.22	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
10/25/2016	06:00	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
10/25/2016	06:00	02_5	ZERO	22.50	22.29	-0.21	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
10/25/2016	06:00	02_5	ZERO	0.00	0.17	0.17	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
10/25/2016	06:00	02_5	ZERO	22.50	22.34	-0.16	-N/A -	2.00	0	1.00	PASS	49.2	CC42593	2/2/2024
10/25/2016	06:00	02_5	ZERO	0.00	0.16	0.16	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
10/24/2016	06:00	02_5	ZERO	22.50	22.37	-0.13	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
10/24/2016	06:00	02_5	ZERO	0.00	0.16	0.16	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024
10/24/2016	06:00	02_5	SPAN	22.50	22.33	-0.17	-N/A -	2.00	0	1.00	PASS	0.0	CC42593	2/2/2024

Company: McGrath Generating Station
 Plant: 251 N. Harbor Blvd.
 City/St: Oxnard, CA 93035
 Source: stack

Daily Stack Calibration Report
 Generated: 1/31/2017

Period Start: 1/1/2016
 Period End: 12/31/2016
 Included Calibrations: Daily (40CFR60)/(40CFR75)

Date	Time	Channel	Type	Target Units	Actual Units	Diff Units	Error %	Units	Part60 Allowable %	WD Error %	Units	Part75 Allowable %	Process On	Gross M ₅ M ^w	Bottle ID	Expire Date
10/23/2016	17:02	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	45.0	CC277291	2/1/2024
10/23/2016	17:02	02_5	SPAN	22.50	22.29	-0.21	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	45.0	CC277291	2/1/2024
10/22/2016	16:45	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	45.5	CC277291	2/1/2024
10/22/2016	16:45	02_5	SPAN	22.50	22.20	-0.30	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	45.5	CC277291	2/1/2024
10/21/2016	12:00	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	0.0	CC277291	2/1/2024
10/21/2016	12:00	02_5	SPAN	22.50	22.21	-0.29	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	0.0	CC277291	2/1/2024
10/21/2016	06:16	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	0.0	CC277291	2/1/2024
10/20/2016	17:01	02_5	SPAN	22.50	22.11	-0.39	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	0.0	CC277291	2/1/2024
10/19/2016	17:16	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.9	CC277291	2/1/2024
10/19/2016	17:16	02_5	SPAN	22.50	22.23	-0.25	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.9	CC277291	2/1/2024
10/18/2016	16:42	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	49.5	CC277291	2/1/2024
10/18/2016	16:42	02_5	SPAN	22.50	22.27	-0.23	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	49.5	CC277291	2/1/2024
10/18/2016	17:46	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.9	CC277291	2/1/2024
10/17/2016	17:16	02_5	SPAN	22.50	22.21	-0.29	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.9	CC277291	2/1/2024
10/16/2016	17:16	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.7	CC277291	2/1/2024
10/16/2016	17:16	02_5	SPAN	22.50	22.24	-0.26	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.7	CC277291	2/1/2024
10/16/2016	18:01	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.9	CC277291	2/1/2024
10/15/2016	18:01	02_5	SPAN	22.50	22.27	-0.23	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.9	CC277291	2/1/2024
10/14/2016	17:18	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.7	CC277291	2/1/2024
10/14/2016	17:18	02_5	SPAN	22.50	22.27	-0.23	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.7	CC277291	2/1/2024
10/13/2016	17:01	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	49.1	CC277291	2/1/2024
10/13/2016	17:01	02_5	SPAN	22.50	22.28	-0.22	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	49.1	CC277291	2/1/2024
10/13/2016	11:02	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	49.2	CC277291	2/1/2024
10/13/2016	11:02	02_5	SPAN	22.50	22.29	-0.21	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	49.2	CC277291	2/1/2024
10/10/2016	17:16	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	0.0	CC277291	2/1/2024
10/10/2016	17:16	02_5	SPAN	22.50	22.35	-0.15	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	0.0	CC277291	2/1/2024
10/09/2016	17:01	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	49.1	CC277291	2/1/2024
10/09/2016	17:01	02_5	SPAN	22.50	22.19	-0.31	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	49.1	CC277291	2/1/2024
10/08/2016	18:03	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.7	CC277291	2/1/2024
10/08/2016	18:03	02_5	SPAN	22.50	22.25	-0.25	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.7	CC277291	2/1/2024
10/07/2016	09:49	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.5	CC277291	2/1/2024
10/07/2016	09:49	02_5	SPAN	22.50	22.24	-0.26	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.5	CC277291	2/1/2024
10/06/2016	18:03	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	0.0	CC277291	2/1/2024
10/06/2016	18:03	02_5	SPAN	22.50	22.24	-0.26	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	0.0	CC277291	2/1/2024
10/04/2016	12:44	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	49.0	CC277291	2/1/2024
10/04/2016	12:44	02_5	SPAN	22.50	22.22	-0.28	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	49.0	CC277291	2/1/2024
10/01/2016	18:00	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	0.0	CC277291	2/1/2024
10/01/2016	18:00	02_5	SPAN	22.50	22.21	-0.29	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	0.0	CC277291	2/1/2024
09/30/2016	17:01	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.4	CC277291	2/1/2024
09/30/2016	17:01	02_5	SPAN	22.50	22.25	-0.25	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.4	CC277291	2/1/2024
09/29/2016	15:40	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.6	CC277291	2/1/2024
09/29/2016	15:40	02_5	SPAN	22.50	22.27	-0.23	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.6	CC277291	2/1/2024
09/29/2016	12:16	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.5	CC277291	2/1/2024
09/29/2016	12:16	02_5	SPAN	22.50	22.29	-0.21	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.5	CC277291	2/1/2024
09/28/2016	15:15	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	0.0	CC277291	2/1/2024
09/28/2016	15:15	02_5	SPAN	22.50	22.34	-0.16	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	0.0	CC277291	2/1/2024
09/28/2016	13:40	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	46.9	CC277291	2/1/2024
09/28/2016	13:40	02_5	SPAN	22.50	22.19	-0.31	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	46.9	CC277291	2/1/2024
09/26/2016	13:40	02_5	ZERO	0.00	0.17	0.17	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.1	CC415465	12/30/2023
09/26/2016	13:40	02_5	SPAN	22.50	22.28	-0.22	-N/A-	2.00	-N/A-	0	-N/A-	1.00	-N/A-	48.1	CC415465	12/30/2023

Company: McOrath Generating Station
Plant: 251 N. Harbor Blvd.
City/State: Onnard, CA 93035
Source: stack
Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Table with columns: Date, Time, Channel, Type, Target Units, Actual Units, Diff Units, Error %, Part60 Allowable, WD Error %, Units, Part75 Allowable, Gross M5, Process On, Bottle ID, Expiry Date. Contains multiple rows of calibration data.

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Daily Stack Calibration Report
Generated: 1/31/2017

Company: McGrath Generating Station
Plant: 251 N Harbor Blvd.
City/State: Oxnard, CA 93035
Source: stack

Table with columns: Date, Time, Channel, Type, Target Units, Actual Units, Diff Units, Error %, Part60 Allowable Units, Part60 Allowable %, Part75 Allowable Units, Part75 Allowable %, Gross MW, Process, Bottle ID, Expiry Date. Rows represent daily calibration events from 07/26/2016 to 04/05/2016.

Daily Stack Calibration Report
Generated: 1/31/2017

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Oxnard, CA 93035
Source: stack

Date	Time	Channel	Type	Target Units	Actual Units	Diff Units	Error %	Units	Part60 Allowable %	WD Error	Units	Part75 Allowable %	Gross_Mm_5 Yr	Process On	Bottle ID	Expiry Date
01/10/2016	17:49	CO_3	ZERO	0.00	0.13	0.13	-N/A-	2.00	-N/A-	0	-N/A-	1.00	49.6	100.0 %	CC400491	8/26/2023
01/10/2016	17:49	CO_3	SPAN	22.50	22.45	-0.05	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC400491	8/26/2023
01/09/2016	18:14	CO_3	ZERO	0.00	0.13	0.13	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC13875	8/26/2023
01/09/2016	18:14	CO_3	SPAN	22.50	22.43	-0.07	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC13875	8/26/2023
01/08/2016	18:13	CO_3	ZERO	0.00	0.13	0.13	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC13875	8/26/2023
01/08/2016	18:13	CO_3	SPAN	22.50	22.34	-0.16	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC400491	8/26/2023
01/08/2016	13:13	CO_3	ZERO	0.00	0.13	0.13	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC13875	8/26/2023
01/08/2016	13:13	CO_3	SPAN	22.50	22.32	-0.18	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC400491	8/26/2023
01/06/2016	15:30	CO_3	ZERO	0.00	0.12	0.12	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC400491	8/26/2023
01/06/2016	15:30	CO_3	SPAN	22.50	22.22	-0.28	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC400491	8/26/2023
01/05/2016	12:59	CO_3	ZERO	0.00	0.13	0.13	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC400491	8/26/2023
01/05/2016	12:59	CO_3	SPAN	22.50	22.11	-0.39	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC400491	8/26/2023
01/04/2016	06:52	CO_3	ZERO	0.00	0.12	0.12	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC400491	8/26/2023
01/04/2016	06:52	CO_3	SPAN	22.50	22.10	-0.40	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC400491	8/26/2023
01/03/2016	16:47	CO_3	ZERO	0.00	0.13	0.13	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC400491	8/26/2023
01/03/2016	16:47	CO_3	SPAN	22.50	22.16	-0.34	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC400491	8/26/2023
01/01/2016	17:44	CO_3	ZERO	0.00	0.12	0.12	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC13875	8/26/2023
01/01/2016	17:44	CO_3	SPAN	22.50	22.35	-0.15	-N/A-	2.00	-N/A-	0	-N/A-	1.00			CC400491	8/26/2023

FAIL = Difference Error > Regulations Allow
 WARN = Error < Daily Allowable > 5 Consecutive Days Allowed
 ZERR = Invalid Targeted Value Within Regulatory Specs
 ZERR = Reading of Consecutive Days in Warning - (17) Not Available = (00C) No Passed Cal. since a Failed Daily or 5 Days in Warning
 ZERR = Reading of Consecutive Days in Warning - (17) Not Available = (00C) No Passed Cal. since a Failed Daily or 5 Days in Warning
 Note: 40CFR75 pass/fail determination is performed after rounding the value of Error, or Drift, to one decimal place
 Note: value is average of valid minutes during calibration
 Gross_Mm_5 = Process On percentage is number of minutes on during calibration / minutes in calibration
 # Bottle is within 7 days of expiration
 # Bottle has Expired - Must be Replaced

Part 60 Calibration (Absolute Average DIFF and Calibration % Error)

Channel	Diff Units	Error %	Diff Units	Error %
COHIGH_5	0.18	0.11	0.72	0.93
COLOW_5	0.11	0.11	1.11	1.11
NOX_NH3H_5	0.12	0.31	2.02	1.08
NOX_NH3L_5	0.03	0.00	0.07	0.78
NOXHIGH_5	0.04	0.41	1.35	0.78
NOXL0W_5	0.18	-N/A-	0.19	-N/A-

Part 75 Calibration (Absolute Average DIFF and Calibration % Error)

Channel	Diff Units	Error %	Diff Units	Error %
COHIGH_5	0.18	-N/A-	1.72	-N/A-
COLOW_5	0.11	-N/A-	0.11	-N/A-
NOX_NH3H_5	0.12	-N/A-	2.02	-N/A-
NOX_NH3L_5	0.03	-N/A-	0.07	-N/A-
NOXHIGH_5	0.04	0.00	1.35	0.78
NOXL0W_5	0.18	-N/A-	0.19	-N/A-

Daily Stack Calibration Report
Generated: 1/31/2017

Period Start: 1/1/2016
Period End: 12/31/2016
Included Calibrations: Daily (40CFR60)/(40CFR75)

Company: McGrath Generating Station
Plant: 251 N. Harbor Blvd.
City/St: Oxnard, CA 93035
Source: stack

Performance Specification

Channel	Part 60 FAIL		Part 75	
	PASS	FAIL	PASS	FAIL
COHIGH_5	<=20.0%	>20.0%	- N/A -	- N/A -
CO	<=20.0%	>20.0%	- N/A -	- N/A -
COLOW_5	<=10.0%	>10.0%	- N/A -	- N/A -
NOXHIGH_5	<=10.0%	>10.0%	- N/A -	- N/A -
NOX	<=10.0%	>10.0%	- N/A -	- N/A -
NOXHIGH_5	<=10.0%	>10.0%	<=5.0%	>5.0%
NOX	<=10.0%	>10.0%	<=5.0%	>5.0%
NOXLOW_5	<=10.0%	>10.0%	<=1.0%	>1.0%
O2_5	<=2.0%	>2.0%	<=1.0%	>1.0%

Perf: [Part60 Daily CO] Zero = 20.0 %Range, Span = 20.0 %Range
Perf: [Part60 Daily CO] Zero = 20.0 %Range, Span = 20.0 %Range
Perf: [Part60 Daily NOX] Zero = 10.0 %Range, Span = 10.0 %Range
Perf: [Part60 Daily NOX] Zero = 10.0 %Range, Span = 10.0 %Range
Perf: [Part75 Daily NOX] Zero = 5.0 %Range, Span = 5.0 %Range, [Part60 Daily NOX] Zero = 10.0 %Range, Span = 10.0 %Range
AltPerf: [Part75 Daily NOX] Zero = 5 ppm (Range<=50 ppm)/10 ppm (50 ppm<Range<=200 ppm), Span = 5 ppm (Range<=50 ppm)/10 ppm (50 ppm<Range<=200 ppm)
Perf: [Part75 Daily NO2] Zero = 5.0 %Range, Span = 5.0 %Range, [Part60 Daily NO2] Zero = 10.0 %Range, Span = 10.0 %Range
AltPerf: [Part75 Daily NO2] Zero = 5 ppm (Range<=50 ppm)/10 ppm (50 ppm<Range<=200 ppm), Span = 5 ppm (Range<=50 ppm)/10 ppm (50 ppm<Range<=200 ppm)
Perf: [Part75 Daily O2] Zero = 1.0 %O2, Span = 1.0 %O2, [Part60 Daily O2] Zero = 2.0 %O2, Span = 2.0 %O2

Title: _____ Signature: _____ Date: ____/____/____

Title: _____ Signature: _____ Date: ____/____/____

Attachment 4

**SCR and CO catalyst temperature and pressure device
calibration records**



Instrumentation Calibration Record McGrath Peaker

Instrument Number | TE-403A

Instrument Name | McGrath Scr Catalyst Inlet Temp Element (B-255-TE-403A)

Zero | _____ Span | _____ Units | _____
 Alarm 1 Setpoint | _____ Alarm 2 Setpoint | _____
 Alarm 1 Inc/Dec | _____ Alarm 2 Inc/Dec | _____

Span Calibration- Found 0% | 99.3 | 25 | 250.2 | 50% | 500.4 | 75% | 752.0 | 100% | 1000.6

Span Calibration- Left 0% | 99.3 | 25 | 250.2 | 50% | 500.4 | 75% | 752.0 | 100% | 1000.6

Switch Calibration Setpoint Found | _____ Setpoint Left | _____

System | Emmissions Reduction

Location | SCR Catalyst

Technician | _____ Completion Date | _____

Manufacturer	Fluke	Manufacturer	Fluke Fluke
Model	9144	Model	9140 / 754
Serial Number	A98356/B2A126	Serial Number	A93426/2093037
Calibration Due Date	1/23/16 / 1/25/16	Calibration Due Date	12/30/15 / 1/27/16



Instrumentation Calibration Record McGrath Peaker

Instrument Number | TE-403B

Instrument Name | McGrath Scr Catalyst Inlet Temp Element (B-255-TE-403B)

Zero | | Span | | Units | |

Alarm 1 Setpoint | | Alarm 2 Setpoint | |

Alarm 1 Inc/Dec | | Alarm 2 Inc/Dec | |

Span Calibration- Found 0% | 99.5 | 25 | 250.3 | 50% | 499.8 | 75% | 752.4 | 100% | 1002.4

Span Calibration- Left 0% | 99.5 | 25 | 250.3 | 50% | 499.8 | 75% | 752.4 | 100% | 1002.4

Switch Calibration Setpoint Found | | Setpoint Left | |

System | Emissions Reduction

Location | SCR Catalyst

Technician | | Completion Date | |

Manufacturer	Fuke	Manufacturer	Fuke
Model	9144	Model	9140 / 754
Serial Number	A98356 / B2A126	Serial Number	A93426 / 2093037
Calibration Due Date	1/23/16 / 1/25/16	Calibration Due Date	12/30/15 / 1/27/16



Instrumentation Calibration Record McGrath Peaker

Instrument Number | TE-403C

Instrument Name | McGrath Scr Catalyst Inlet Temp Element (B-255-TE-403C)

Zero | _____ Span | _____ Units | _____

Alarm 1 Setpoint | _____ Alarm 2 Setpoint | _____

Alarm 1 Inc/Dec | _____ Alarm 2 Inc/Dec | _____

Span Calibration- Found 0% | 99.5 | 25 | 251.1 | 50% | 500.4 | 75% | 752.5 | 100% | 1000.8

Span Calibration- Left 0% | 99.5 | 25 | 251.1 | 50% | 500.4 | 75% | 752.5 | 100% | 1000.8

Switch Calibration Setpoint Found | _____ Setpoint Left | _____

System | Emmissions Reduction

Location | SCR Catalyst

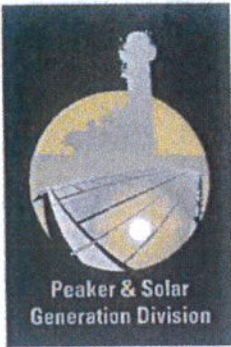
Technician | _____ Completion Date | _____

Manufacturer | Flyke | Manufacturer | Flyke

Model | 9144 | Model | 9140 / 754

Serial Number | A98356/B2A126 | Serial Number | A93426/2093037

Calibration Due Date | 1/23/16 / 1/25/16 | Calibration Due Date | 12/30/15 / 1/27/16



Instrumentation Calibration Record McGrath Peaker

Instrument Number | TE-403D

Instrument Name | McGrath Scr Catalyst Inlet Temp Element (B-255-TE-403D)

Zero | _____ Span | _____ Units | _____

Alarm 1 Setpoint | _____ Alarm 2 Setpoint | _____

Alarm 1 Inc/Dec | _____ Alarm 2 Inc/Dec | _____

Span Calibration- Found 0% | 99.3 | 25 | 250.3 | 50% | 500.7 | 75% | 752.2 | 100% | 1000.4

Span Calibration- Left 0% | 99.3 | 25 | 250.3 | 50% | 500.7 | 75% | 752.2 | 100% | 1000.4

Switch Calibration Setpoint Found | _____ Setpoint Left | _____

System | Emissions Reduction

Location | SCR Catalyst

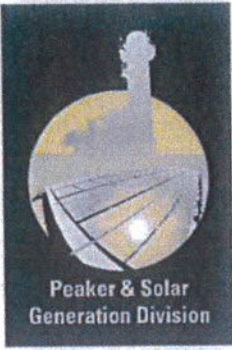
Technician | _____ Completion Date | _____

Manufacturer | Fluke | Manufacturer | Fluke

Model | 9144 | Model | 9140 / 754

Serial Number | A98356 / B2A126 | Serial Number | A93426 / 2093037

Calibration Due Date | 1/23/16 / 1/25/16 | Calibration Due Date | 12/30/15 / 1/27/16



Instrumentation Calibration Record McGrath Peaker

Instrument Number TE-404A

Instrument Name McGrath Scr Catalyst Outlet Temp Element (B-255-TE-404A)

Zero Span Units

Alarm 1 Setpoint Alarm 2 Setpoint

Alarm 1 Inc/Dec Alarm 2 Inc/Dec

Span Calibration- Found 0% 100.6 25 252.0 50% 501.1 75% 751.6 100% 1000.2

Span Calibration- Left 0% 100.6 25 252.0 50% 501.1 75% 751.6 100% 1000.2

Switch Calibration Setpoint Found Setpoint Left

System Emmissions Reduction

Location SCR Catalyst

Technician Completion Date

Manufacturer Fluke Manufacturer Fluke

Model 9144 Model 9140 / 754

Serial Number A98356 / B2A126 Serial Number A93426 / 2093037

Calibration Due Date 1/23/16 / 1/25/16 Calibration Due Date 12/30/15 / 1/27/16



Instrumentation Calibration Record McGrath Peaker

Instrument Number | TE-404B

Instrument Name | McGrath Scr Catalyst Outlet Temp Element (B-255-TE-404B)

Zero | _____ Span | _____ Units | _____

Alarm 1 Setpoint | _____ Alarm 2 Setpoint | _____

Alarm 1 Inc/Dec | _____ Alarm 2 Inc/Dec | _____

Span Calibration- Found 0% | 99.9 | 25 | 250.5 | 50% | 500.2 | 75% | 751.6 | 100% | 1000.4

Span Calibration- Left 0% | 99.9 | 25 | 250.5 | 50% | 500.2 | 75% | 751.6 | 100% | 1000.4

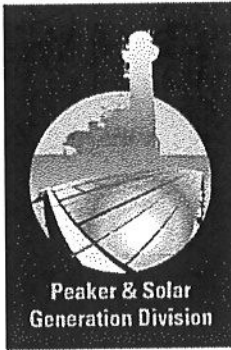
Switch Calibration Setpoint Found | _____ Setpoint Left | _____

System | Emmissions Reduction.

Location | SCR Catalyst

Technician | _____ Completion Date | _____

Manufacturer	Fluke	Manufacturer	Fluke
Model	9144	Model	9140 / 754
Serial Number	A98356/B2A126	Serial Number	A93426/2093097
Calibration Due Date	1/23/16/1/25/16	Calibration Due Date	12/30/15/1/27/16



Instrumentation Calibration Record McGrath Peaker

Instrument Number | PDIT-402

Instrument Name | Co Catalyst Pres Drop Transmitter W/ Ind (B-255-PDIT-402)

Zero | 0 | Span | 5 | Units | °WG

Alarm 1 Setpoint | | Alarm 2 Setpoint | |

Alarm 1 Inc/Dec | | Alarm 2 Inc/Dec | |

⊕ Span Calibration- Found 0% | 4.11 | 25 | 8.10 | 50% | 12.18 | 75% | 16.15 | 100% | 20.20

⊕ Span Calibration- Left 0% | 4.11 | 25 | 8.10 | 50% | 12.18 | 75% | 16.15 | 100% | 20.20

⊕ Switch Calibration Setpoint Found | | Setpoint Left | |

System | NH3 System

Location | NH3 Service Platform

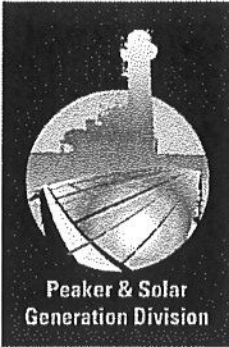
Technician | STOWE | Completion Date | 3-18-16.

Manufacturer | MERIAM | Manufacturer | FLOKE

Model | MZ SERIES | Model | 754

Serial Number | 0842102463 | Serial Number | 2093037

Calibration Due Date | 1-27-17 | Calibration Due Date | 1-27-17



Instrumentation Calibration Record McGrath Peaker

Instrument Number | PDIT-403

Instrument Name | SCR Catalyst Pres Drop Transmitter W/ Ind (B-255-PDIT-403)

Zero | 0 | Span | 10 | Units | "WG

Alarm 1 Setpoint | | Alarm 2 Setpoint | |

Alarm 1 Inc/Dec | | Alarm 2 Inc/Dec | |

⊙ Span Calibration- Found 0% | 4.18 | 25 | 8.18 | 50% | 12.18 | 75% | 16.22 | 100% | 20.23

⊙ Span Calibration- Left 0% | 4.18 | 25 | 8.18 | 50% | 12.18 | 75% | 16.22 | 100% | 20.23

⊙ Switch Calibration Setpoint Found | | Setpoint Left | |

System | NH3 System

Location | NH3 Service Platform

Technician | STONE | Completion Date | 3-18-16

Manufacturer | MERIAM | Manufacturer | FLOKE 754

Model | M2 SERIES | Model |

Serial Number | 0842102463 | Serial Number | 2093037.

Calibration Due Date | 1-29-17 | Calibration Due Date | 1-27-17.

Attachment 5

Emergency generator and engine specification



101 Industrial Blvd.
Mansfield, TX 76063-3611
Phone (817) 840-5544
Fax (817) 453-0219
Toll Free 1-800-888-5557

Equipment Proposed:

Kohler 625 KW Standby Generator
Model Number 600RZW

Engine Waukesha VGF L36GLD Lean-Burn

- Natural Gas Fueled
- Isochronous Governor
- Heavy duty dry type air filters
- Lube oil filters and drain connections to skid
- Unit mounted radiator with shell and fan guard
- 24-volt starter and alternator
- Battery with cables and mounting tray
- Battery charger 10 amp with charge rate meter
- Muffler critical type with flex connector

Engine block heater thermostatically controlled

Generator: 1800 RPM, PMG type excitation, 60 Hz, 3 phase, 480 volt, .25% constant voltage regulator, Class H insulation, direct flex disc drive, 10 or 12 lead reconnectable

Decision-Maker 550 Digital Generator Controller

Detailed Specs Included at end of this document

All weather outdoor sound attenuated generator enclosure rated 85 dba @ 1 meter with interior lighting
1000 amp 100% rated main line circuit breaker mounted in connection box with GFI

Spring isolators

Dry contacts

Alternator heater

Woodward speed controller

Marathon DVR2000EC voltage regulator

Natural gas regulator 8" W.C.-2.5psig

Natural gas solenoid valve

Project Management Services

- Start-up, three up to 8-hour days including travel
- Training of owner's personnel at time of start up
- Operation of equipment at Wedlake Manufacturing in Tulsa, OK
- Factory load bank testing
- Submittal drawings
 - Dimensional drawings, Electrical drawings, Product specifications
- Production testing
- Technical assistance
- Operation and maintenance manuals for engine, generator and controls
- One (1) year warranty

Decision-Maker 550 Controller Details

Standards:

- NFPA 99
- NFPA 110, Level 1
- UL-508 (pending)

Hardware Features

- Alarm horn
- Battery circuits are fuse protected
- Controller mounts in four orientations locally or remotely up to a distance of 12 m (40 ft.)
- Five LED status indicating lights
- Latch-type emergency stop switch
- Vacuum fluorescent display
- Terminals for remote annunciator
- Three-position (run, off/reset, auto) selector switch

Shutdown Functions

Engine functions:

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PAGE 0050

- Air damper fault, if equipped
- High coolant temperature
- High oil temperature
- Low coolant level
- Low oil pressure
- Overcrank
- Overspeed
- General functions:
- Auxiliary—(up to 7 analog inputs each with a high and low programmable shutdown level). NOTE: Non-ECM models have 5 programmable shutdowns)
- Auxiliary—Digital (up to 21 programmable shutdowns)
- ECM communications loss (ECM models only)
- Emergency stop
- Internal fault
- Master switch in off/reset position
- Master switch error
- Master switch open
- NFPA 110 fault

Generator functions:

- Alternator protection against overload and short circuits
- Locked rotor (failed to crank)
- Over AC output voltage
- Overfrequency
- Under AC output voltage
- Underfrequency

Warning Functions

Engine functions:

- Coolant temperature signal loss
- High battery voltage
- High coolant temperature
- Low battery voltage
- Low coolant temperature
- Low fuel (level or pressure)*
- Low oil pressure
- Oil pressure signal loss
- Speed sensor fault
- Starting aid fault
- Weak battery

General functions:

- Auxiliary—(up to 7 analog inputs each with a high and low programmable warning level). NOTE: Non-ECM models have 5 programmable warnings)
- Auxiliary—Digital (up to 21 programmable warnings)
- Battery charger fault*
- Emergency power system (EPS) supplying load
- Engine cooldown delay
- Engine start delay
- Load shed kW overload
- Load shed underfrequency
- Master switch not in auto
- NFPA-110 fault
- System ready

Generator functions:

- AC sensing loss
- Generator running
- Ground fault*
- Overcurrent
- Underfrequency
- Requires optional input sensors.

User-Defined Common Faults

The user customizes outputs through a menu of shutdowns and warnings.

User defines up to 21 relay driver outputs (RDOs), (relays not included) from the following list of functions:

Engine functions:

- Air damper fault, if equipped
- Coolant temperature signal loss
- High battery voltage
- High coolant temperature shutdown
- High coolant temperature warning
- High oil temperature (ECM models only)
- Low battery voltage

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PAGE 3 OF 8

- Low coolant level
- Low coolant temperature
- Low fuel (level or pressure)*
- Low oil pressure shutdown
- Low oil pressure warning
- Oil pressure signal loss
- Overcrank
- Overspeed
- Speed sensor fault
- Starting aid
- System ready
- Weak battery

General functions:

- Battery charger fault*
- ECM communications loss (ECM models only)
- EEPROM write failure
- Emergency stop
- Engine cooldown delay
- Engine start delay
- EPS supplying load
- Internal fault
- Load shed kW overload
- Load shed underfrequency
- Master switch error
- Master switch not in auto
- Master switch to off
- NFPA 110 common alarm fault

Generator functions:

- AC sensing loss
- Alternator protection against overload and short circuits
- Generator running
- Ground fault
- Locked rotor (failed to crank)
- Overcurrent
- Overfrequency
- Overvoltage
- Underfrequency
- Undervoltage

* Requires optional input sensors.

NFPA-110 Common Alarms

Additional annunciated alarms including NFPA 110 alarms.

Engine functions:

- High battery voltage
- High coolant temperature shutdown
- High coolant temperature warning
- Low battery voltage
- Low coolant temperature warning
- Low fuel (level or pressure)*
- Low oil pressure shutdown
- Low oil pressure warning
- Overcrank
- Overspeed

General functions:

- Battery charger fault*
- Master switch not in auto
- NFPA 110 common alarm

* Requires optional input sensors.

Monitoring

Standard Equipment and Features

Alarm horn

Indicators:

- Not in auto (yellow)
- Program mode (yellow)
- System ready (green)
- System shutdown (red)
- System warning (yellow)
- Switches and standard features:
- Keypad, 16-button multi-function soft-membrane environmentally sealed
- Lamp test

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- Switch, auto/off-reset/run (engine start)
- Switch, emergency stop (normally closed contacts)
- Vacuum fluorescent display with two lines of 20 characters

Displays

Some engine displays are dependent upon enhanced electronic engine control availability.

Engine monitoring (metric or English units):

- Ambient temperature (ECM models only)
- Battery voltage
- Coolant—pressure, temperature, and level (ECM models only)
- Engine start countdown
- Fuel—pressure, temperature, fuel rate, amount of fuel used during last run (ECM models only)
- Oil—pressure, temperature, level, and crankcase pressure
- RPM

Generator monitoring:

- Current (L1, L2, L3), _ 0.25% accuracy
- Frequency, _ 0.5% accuracy
- Kilowatts, total per phase (L1, L2, L3), _ 0.5% accuracy
- KVA, total per phase (L1, L2, L3), _ 0.5% accuracy
- KVAR, total absorbing/generating per phase (L1, L2, L3), _ 0.5% accuracy
- Percent alternator duty level (actual load kW/standby kW rating)
- Power factor per phase, leading/absorbing
- Voltage (line-to-line, line-to-neutral for all phases), _ 0.25% accuracy

Operational records:

- Event history (stores up to 100 system events)
- Last start date
- Number of starts
- Number of starts since last maintenance
- Operating days since last maintenance
- Operating mode—standby or prime power
- Run time (total, loaded and unloaded hours, and total kW hours)
- Run time since maintenance (total, loaded, and unloaded hours and total kW hours)
- System shutdowns
- System warnings
- Time, date, and day of week

Time delays:

- Crank cycles for on/pause
- Crank cycles for overcrank shutdown
- Engine cooldown
- Engine start
- Load shed
- Voltage, over- and under-
- Starting aid

System parameters:

- Current, rated
- ECM serial number (ECM models only)
- Engine model number
- Engine serial number
- Frequency
- Generator set model number
- Generator set serial number
- Generator set spec number
- kW Rating
- Phase, single and three
- Unit number
- Voltage
- Voltage configuration, wye or delta

Inputs

Customer and remote inputs:

- Analog inputs 0-5 VDC (up to 7 user-defined analog inputs with multiple shutdown and warning levels). NOTE: Non-ECM models have 4 programmable shutdowns)
- Digital contact (up to 21 user-defined digital inputs with shutdown or warning levels).
- Ground fault detector*
- Remote emergency stop
- Remote reset
- Remote 2-wire start

Digital inputs:

- Air damper fault, if equipped
- Battery charger fault*
- Emergency stop

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Model: 600RZW

KOHLER POWER SYSTEMS

190-600 V

Gas



Ratings Range

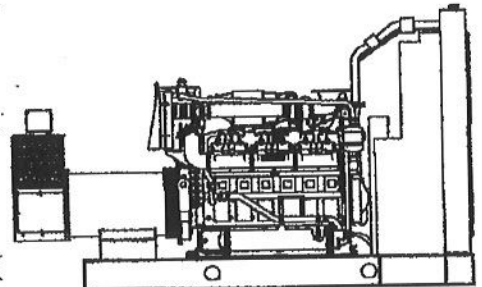
	Lean-Burn GLD Engine		Rich-Burn GSID Engine	
	60 Hz	50 Hz	60 Hz	50 Hz
Standby: kW	620-625	524-528	600	500-504
kVA	775-781	655-660	750	625-630
Prime: kW	510-600	428-504	510-540	428-456
kVA	638-750	535-630	638-675	535-570

Generator Set Ratings

Alternator Voltage	Ph	Hz	Lean-Burn GLD Engine			Rich-Burn GSID Engine			
			130°C Rise Standby	105°C Rise Prime	80°C Rise Prime	130°C Rise Standby	105°C Rise Prime	80°C Rise Prime	
			kW/kVA	kW/kVA	kW/kVA	kW/kVA	kW/kVA	kW/kVA	
5M4032	120/208	3	60	620/775	590/738	570/713	600/750	535/669	535/669
	127/220	3	60	620/775	590/738	590/738	600/750	535/669	535/669
	139/240	3	60	625/781	595/744	570/713	600/750	540/675	540/675
	240/416	3	60	620/775	590/738	570/713	600/750	535/669	535/669
	277/480	3	60	625/781	595/744	570/713	600/750	540/675	540/675
	110/190	3	50	524/655	500/625	488/610	500/625	456/570	456/570
	115/200	3	50	524/655	500/625	472/590	500/625	456/570	456/570
	120/208	3	50	524/655	500/625	440/550	500/625	456/570	440/550
	220/380	3	50	524/655	500/625	488/610	500/625	456/570	456/570
	230/400	3	50	524/655	500/625	472/590	500/625	456/570	456/570
240/416	3	50	524/655	500/625	440/550	500/625	456/570	440/550	
5M4034	120/208	3	60	625/781	595/744	590/738	600/750	540/675	540/675
	127/220	3	60	625/781	595/744	595/744	600/750	540/675	540/675
	139/240	3	60	625/781	595/744	585/731	600/750	540/675	540/675
	240/416	3	60	625/781	595/744	590/738	600/750	540/675	540/675
	277/480	3	60	625/781	595/744	585/731	600/750	540/675	540/675
	110/190	3	50	528/660	504/630	500/625	504/630	456/570	456/570
	115/200	3	50	528/660	504/630	472/590	504/630	456/570	456/570
	120/208	3	50	528/660	504/630	428/535	504/630	456/570	428/535
	220/380	3	50	528/660	504/630	500/625	504/630	456/570	456/570
	230/400	3	50	528/660	504/630	422/590	504/630	456/570	456/570
240/416	3	50	528/660	504/630	428/535	504/630	456/570	428/535	
5M4036	120/208	3	60	625/781	595/744	600/750	600/750	540/675	540/675
	127/220	3	60	625/781	595/744	570/713	600/750	540/675	535/669
	139/240	3	60	625/781	595/744	595/744	600/750	540/675	540/675
	220/380	3	60	625/781	595/744	595/744	600/750	540/675	540/675
	240/416	3	60	625/781	595/744	595/744	600/750	540/675	540/675
	277/480	3	60	625/781	595/744	595/744	600/750	540/675	540/675
	110/190	3	50	528/660	504/630	504/630	504/630	456/570	456/570
	115/200	3	50	528/660	504/630	504/630	504/630	456/570	456/570
	120/208	3	50	528/660	504/630	480/600	504/630	456/570	456/570
	220/380	3	50	528/660	504/630	504/630	504/630	456/570	456/570
230/400	3	50	528/660	504/630	504/630	504/630	456/570	456/570	
240/416	3	50	528/660	504/630	480/600	504/630	456/570	456/570	
5M4164	220/380	3	60	625/781	595/744	510/638	600/750	540/675	510/638
5M4166	220/380	3	60	625/781	595/744	595/744	600/750	540/675	540/675
5M4274	347/600	3	60	625/781	595/744	530/663	600/750	535/669	530/663
5M4276	347/600	3	60	625/781	595/744	585/706	600/750	540/675	540/675

Standard Features

- Kohler Co. provides one-source responsibility for the generating system and accessories.
 - The generator set and its components are prototype-tested, factory-built, and production-tested.
 - The generator set complies with ISO 8528-5, Class G4 requirements for transient performance.*
 - A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are also available.
 - Alternator features:
 - The brushless, rotating-field alternator has broadrange reconnectability.
 - The pilot-excited, permanent-magnet (PM) alternator provides superior short-circuit capability.
 - Other features:
 - The low coolant level shutdown prevents overheating (standard on radiator models only).
 - The generator set is direct-mounted to the skid.
 - An electronic, isochronous governor delivers precise frequency regulation.
 - Electronic engine controls manage the engine.
 - Lean-burn natural gas technology provides maximum power and fuel efficiency.
 - Rich-burn natural gas technology reduces harmful exhaust emissions when used with a catalytic converter.
- * This generator set does not meet NFPA 110 requirements for the one-step load acceptance and the 10-second start sequence.



RATINGS: All three-phase units are rated at 0.8 power factor. **Standby Ratings:** Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capacity for this rating. Ratings are in accordance with ISO 3046/1, BS 6514, AS 2789, and DIN 6271. **Prime Power Ratings:** Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. **Rich Burn:** A 10% overload capacity is available for one hour in twelve. **Lean Burn:** A 6% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528/1, BS 6514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory. Obtain the technical information bulletin (TIB-101) on ratings guidelines for the complete ratings definitions. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. **GENERAL GUIDELINES FOR DERATING:** Altitude: Deduct 1% for each 150 m (492 ft.) elevation above 500 m (1640 ft.). Temperature: Derate 2% for each 10°C (18°F) temperature above 38°C (100°F).

G4-61 (600RZW) 1/05e

Alternator Specifications

Specifications	Alternator
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Permanent-Magnet, Pilot Exciter
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H, Synthetic, Nonhygroscopic
Temperature rise	130°C, 150°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Rotor balancing	125% (60 Hz), 150% (50 Hz)
Voltage regulation, no-load to full-load (with <0.5% drift due to temp. variation)	3-phase, ±0.25%
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
480 V/380 V	5M4032 (10 lead) 2200 (60Hz), 1375 (50Hz)
480 V/380 V	5M4034 (10 lead) 2600 (60Hz), 1750 (50Hz)
480 V/380 V	5M4036 (10 lead) 3150 (60Hz), 2100 (50Hz)
380 V	5M4164 (4 lead) 2250 (60Hz)
380 V	5M4166 (4 lead) 2750 (60Hz)
600 V	5M4274 (4 lead) 1845 (60Hz)
600 V	5M4276 (4 lead) 2800 (60Hz)

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Superior voltage waveform from two-thirds pitch windings and skewed stator.
- Digital solid-state, volts-per-hertz voltage regulator with ±0.25% no-load to full-load regulation.
- Brushless alternator with brushless pilot exciter for excellent load response.

Application Data

Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	Waukesha Engine	
Engine model	VGF L36GLD, 4-Cycle	
Lean-Burn GLD Engine	VGF L36GSID, 4-Cycle	
Rich-Burn GSID Engine	Turbocharged, Intercooled	
Engine type	12 V	
Cylinder arrangement	36 (2198)	
Displacement, L (cu. in.)	152 x 165 (5.98 x 6.5)	
Bore and stroke, mm (in.)	11:1	
Compression ratio	8.7:1	
Lean-Burn GLD Engine	594 (1950)	
Rich-Burn GSID Engine	495 (1625)	
Piston speed, m/min. (ft./min.)	7, Half Shell	
Main bearings: quantity, type	1800	1500
Rated rpm	Max. power at rated rpm, kWm (BHP)	
Lean-Burn GLD Engine	690 (925)	574 (770)
Rich-Burn GSID Engine	655 (880)	548 (735)
Cylinder head material	Cast Iron	
Piston: type, material	Aluminum Alloy	
Crankshaft material	Forged Steel	
Valve material, intake/exhaust:	Hard-Faced Steel	
Governor: type, make/model	Electronic	
Frequency regulation, no-load to full-load	Isochronous	
Frequency regulation, steady state	±0.50%	
Frequency	Field-Convertible	
Air cleaner type, all models	Dry	

Fuel

Fuel System	60 Hz	50 Hz
Fuel type	Natural Gas	
Fuel supply line inlet, mm (in.)	50.8 (2)	
	ANSI 125 b. Flange	

Natural gas fuel supply pressure, measured at the generator set fuel inlet after any fuel system equipment accessories, kPa (oz./in.²)

2-34 (4.6-80)

Particulate filter requirement, mm (in.)

0.005 (0.0002)

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust flow at rated kW, m ³ /min. (cfm)		
Lean-Burn GLD Engine	135 (4765)	108 (3816)
Rich-Burn GSID Engine	106 (3755)	84 (2952)
Exhaust temperature at rated kW, dry exhaust, °C (°F)		
Lean-Burn GLD Engine	450 (843)	427 (800)
Rich-Burn GSID Engine	600 (1114)	579 (1074)
Maximum allowable back pressure, kPa (in. Hg)	3.73 (1.1)	
Engine exhaust outlet size, mm (in.)	See ADV Drawing	

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Ignition system	Electronic	
Battery charging, min.	Requires Float/Equalizer Battery Charger, 24 V, 10 A	
Starter motor rated voltage (DC)	24	
Battery, recommended cold cranking amps (CCA):	2, 1150	
Qty., CCA rating	12	
Battery voltage (DC)	12	

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.)	---	
Oil pan capacity with filter, L (gal.)	163 (43)	
Oil filter: quantity, type	2, Cartridge	
Oil cooler	Water-Cooled	
Oil requirements	SAE40 Allowable Sulfated Ash Content by Weight 0.5-1.0% (GLD) 0.35-0.5% (GSID)	

G4-91 (800RZW) 1/05e

Application Data

Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F)		98 (100)
Engine jacket water capacity, L (gal.)	166 (44)	
Engine auxiliary water capacity, L (gal.)	57 (15)	
Radiator jacket water capacity, including engine, L (gal.)		357 (94)
Radiator auxiliary water capacity, including engine, L (gal.)	224 (59)	
Minimum engine jacket water flow, Lpm (gpm)		
Lean-Burn GLD Engine	825 (218)	697 (184)
Rich-Burn GSID Engine	997 (263)	841 (222)
Minimum engine auxiliary water flow, Lpm (gpm)	235 (62)	197 (52)
Heat rejected to cooling water at standby rated kW, wet exhaust, kW (Btu/min.)		
Lean-Burn GLD Engine	648 (26920)	401 (22780)
Rich-Burn GSID Engine	574 (32670)	476 (27080)
Heat rejected to auxiliary cooling water at standby rated kW, wet exhaust, kW (Btu/min.)		
Lean-Burn GLD Engine	182 (10370)	128 (7300)
Rich-Burn GSID Engine	131 (7470)	102 (5800)
Water pump type		Centrifugal
Fan diameter, including blades, mm (in.)		1829 (72)
Fan, kWm (HP)	31 (42)	19 (25)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O)		0.125 (0.5)

Operation Requirements

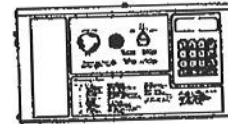
Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m ³ /min. (scfm)*	1890 (59700)	1410 (49800)
Combustion air, m ³ /min. (scfm)		
Lean-Burn GLD Engine	52 (1820)	42 (1485)
Rich-Burn GSID Engine	33 (1180)	27 (965)
Heat rejected to ambient air, kW (Btu/min.):		
Lean-Burn GLD Engine	34 (1933)	31 (1783)
Rich-Burn GSID Engine	42 (2383)	39 (2233)
Alternator	42 (2383)	35 (1960)

* Air density = 1.20 kg/m³ (0.075 lbm/ft³)

Fuel Consumption†	60 Hz	50 Hz
Natural Gas, m³/hr. (cfh) at % load	Lean-Burn Standby Rating	
100%	202 (7153)	164 (5794)
75%	159 (5603)	128 (4533)
50%	115 (4054)	93 (3271)
25%	71 (2504)	57 (2010)
Natural Gas, m³/hr. (cfh) at % load	Lean-Burn Prime Rating	
100%	194 (6851)	157 (5549)
75%	152 (5377)	123 (4348)
50%	111 (3903)	89 (3148)
25%	69 (2429)	55 (1948)
Natural Gas, m³/hr. (cfh) at % load	Rich-Burn Standby Rating	
100%	201 (7106)	165 (5819)
75%	159 (5602)	129 (4569)
50%	116 (4098)	94 (3319)
25%	73 (2594)	59 (2070)
Natural Gas, m³/hr. (cfh) at % load	Rich-Burn Prime Rating	
100%	186 (6559)	152 (5364)
75%	147 (5192)	120 (4228)
50%	108 (3825)	88 (3092)
25%	70 (2458)	55 (1956)

† Fuel energy content = 35.38 MJ/m³ (900 Btu/scf) saturated lower heating value.

Controller



Decision-Maker™ 550 Controller

Audiovisual annunciation.
 Programmable microprocessor logic and digital display features.
 Alternator safeguard circuit protection.
 24-volt engine electrical system capability.
 Remote start, remote annunciation, and remote communication options.
 Refer to G6-46 for additional controller features and accessories.

KOHLER CO., Kohler, Wisconsin 53044 USA
 Phone 920-565-3381, Fax 920-459-1648
 For the nearest sales and service outlet in the
 US and Canada, phone 1-800-544-2444
 KohlerPowerSystems.com

Kohler Power Systems
 Asia Pacific Headquarters
 7 Jurong Plier Road
 Singapore 619159
 Phone (65) 6264-6422, Fax (65) 6264-6455

Standard Features and Accessories

Standard Features

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Alternator Protection
- Oil Drain Extension
- Operation and Installation Literature
- Radiator Duct Flange

Accessories

- Enclosed Unit
 - Sound Enclosure (with enclosed critical silencer)
 - Weather Enclosure (with enclosed critical silencer)
- Open Unit
 - Exhaust Silencer, Critical, Lean-Burn GLD Engine: 60 Hz kit: PA-354898; 50 Hz Kit: PA-354894
 - Exhaust Silencer, Critical, Rich-Burn GSID Engine: Kit: PA-354894
 - Exhaust Silencer, Residential, Kit: PA-354892
 - Flexible Exhaust Connector, Stainless Steel
- Cooling System
 - Block Heater
 - Remote Radiator Cooling
- Fuel System
 - Air/Fuel Ratio Controller
 - Gas Regulator
 - Natural Gas Filter
 - Gas Solenoid Valve
- Electrical System
 - Battery
 - Battery Charger, Equalize/Float Type
 - Battery Heater
 - Battery Rack and Cables
- Engine and Alternator
 - Bus Bar Kits
 - CSA Certification
 - Alternator Strip Heater
 - Line Circuit Breaker (NEMA1 enclosure) *100% noted*
 - Line Circuit Breaker with Shunt Trip (NEMA1 enclosure)
 - Optional Alternators
 - Pre-Lube Pumps
 - Pre-Lube Pumps with Heaters
 - Rated Power Factor Testing
 - Remote Voltage Adjust Control
 - Spring Isolators

Maintenance and Literature

- General Maintenance Literature Kit
- Maintenance Kit (includes air, oil, and fuel filters)
- Overhaul Literature Kit
- Production Literature Kit

Controller

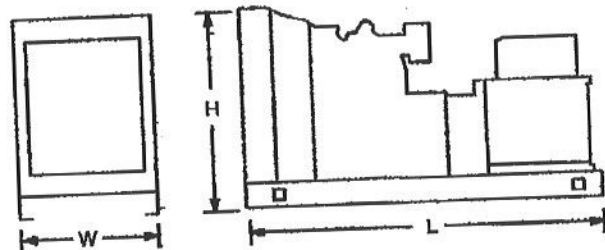
- Common Failure Relay Kit
- Communications Products and PC Software
- Customer Connection Kit
- Dry Contact Kit (isolated alarm)
- Remote Annunciator Panel
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop Kit
- Remote Mounting Cable
- Run Relay Kit

Miscellaneous Accessories

- Woodsward Controller*
- Manometer NVD 2000 EC*
-
-
-
-
-
-
-

Dimensions and Weights

Overall Size, L x W x H, mm (in.): 4924 x 2416 x 3111 (193.8 x 95.1 x 122.5)
 Weight (radiator model), wet, kg (lb.): 10750 (23700)



NOTE: This drawing is provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

DISTRIBUTED BY:

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G4-91 (800RZW) 1/05e

Attachment 6

Emergency generator and engine operating log

Black Start Internal Combustion Engine Monthly Operating Log

Model: Waukesha, Model VGF36 GL/GLD
 Fuel Type Natural Gas

Site: McGrathBeach Peaker Project
 Facility ID: 7891
 BHP: 924 HP
 Device ID:

Operator shall limit the operating time to no more than 200 hours in any one year. The 200 hours per year limit may include up to 50 hours per year operating time to maintain Operator shall install and maintain non-resettable totalizing time meter to indicate elapsed operating time of engine.
 The engine shall only be operated during utility failure periods (except for maintenance).

Permit Conditions:

Date	Timer Reading (Start)	Timer Reading (End of run)	Total Hours Operated	Reason for Operation	Emergency Operation Hours	Maintenance and Testing Hours	Rolling Hours	Operator Initial
1/2/2015	35.6	36.0	0.4	Monthly Test	0.4	0.0		
1/7/2015	36.0	37.1	1.1	Monthly BSG Test	0.0	1.1		
1/23/2015	37.1	38.0	0.9	Load Bank Test	0.0	0.9		
2/5/2015	38.0	39.0	1.0	Black Start Islanding Test	0.0	1.0		
3/8/2015	39.0	40.1	1.1	Monthly BSG Test	0.0	1.1		
4/3/2015	40.1	41.3	1.2	Monthly BSG Test	0.0	1.2		
5/12/2015	41.3	41.5	0.2	Aborted Monthly Test	0.0	0.2		
5/18/2015	41.5	43.5	2.0	Maintenance	0.0	2.1		
6/29/2015	43.5	44.6	1.1	Monthly Test	0.0	1.1		
7/18/2015	44.6	46.1	1.5	Quarterly BSG Test	0.0	1.5		
7/20/2015	46.1	46.5	0.4	Monthly BSG Test	0.0	0.4		
8/10/2015	46.5	47.1	0.6	BSG Test run	0.0	0.6		
8/16/2015	47.1	56.1	9.0	Power Outage	9.0	0.0		
9/22/2015	56.1	56.8	0.7	Monthly BSG Test	0.0	0.7		
10/7/2015	56.8	57.9	1.1	Monthly BSG Test	0.0	1.1		
10/21/2015	57.9	57.9	0.0	Manitenance Adjustments	0.0	0.0		
11/18/2015	57.9	58.6	0.7	Quarterly BSG Test	0.0	0.7		
12/29/2015	58.6	58.8	0.2	Monthly Test	0.0	0.2		

Total	
Total Emergency Use Hours (hours/year)	9.4
Total Maintenance and Testing Hours (hours/year)	13.9
Total Hours (hours/year)	23.3

Attachment 7

Ammonia tank pressure vacuum relief valve calibration sheet

Basin Valve Company

Safe, Valve Service Report

Customer : Southern California Edison

PO No :

Site : Peaker Generating Stations

Rev : 3

Sales Order : 177646

Date Required : 3/11/2016

Location :

Repair Nameplate Data

By : BM

Original Nameplate Data

By : BM

SAP Number :
 Tag Number : PSV-0501-1
 Manufacturer : CROSBY
 Model No : 961202MB
 Serial No : 07-08423
 Shop No : 74864026
 Interval : 0
 Units : SCFM
 Inlet : 1 / MNPT

Pretest Date : 3/10/2016
 Job Number : 1106
 Orifice :
 Set Press : 50
 Cold Set : 50
 Back Press : 0
 Capacity : 137
 Temp Corr : 0
 Outlet : 1 / FNPT

Set Pressure : 50
 Capacity : 137
 Temp Corr :
 Model Number : 961202MB
 Serial Number : 07-08423

Cold Set : 50
 % Over Pressure : 10
 Units : SCFM
 Code Stamp : UV
 Code Case :

Set Pressure : 0
 Capacity : 0
 Repair Company :
 Last Repair Date :
 Field Location :

Cold Set :
 Units :
 Back Pressure :
 Unique ID :
 VR : | |

Work Order :

Pre-Test Information

By : MG

Pop PSIG : 51.73

New Valve :

No Pop :

Fouled :

Leaked At :

Probable Cause of Failure : Valve performed properly

Conditions After Dismantling

By : N/A

Cleanliness Condition :

Mechanical Condition : Good condition

Parts	Pretest Conditions	Work Performed	Note	Part No
Bonnet Assembly				
Spring				
Upper Spring Washer				
Lower Spring Washer				
Compression Screw				
Compression Jam Nut				
Body				
Inlet Flange				
Outlet flange				
Guide				
Disc				
Disc Holder				
Nozzle				
Spindle				
Overlap Adjustment				
Retaining Ring				
Floating Washer				
Spindle Nut				
Lock Nut				
Cap				
Top lever & Pin				
Lower Lever & Pin				
Upper Adj Ring & Pin				
Lower Adj Ring & Pin				
Bellows				
Gaskets				

Critical Dimensions

Disc :	Min / Max :	After Repair :	Material Left :
Disc Holder :	Min / Max :	After Repair :	Material Left :
Guide :	Min / Max :	After Repair :	Material Left :
Nozzle :	Min / Max :	After Repair :	Material Left :

Ring Adjustment / Spring Info

Upper Ring :	As Found :	After Repair :
Lower Ring :	As Found :	After Repair :
Compression Screw :	As Found :	After Repair :
Spindle / Stem :	As Found :	After Repair :
Spring Number :		Spring Range :

Special Instructions :

Back Pressure Tested at PSIG O2 Cleaning Required Repair as Required Replace Soft Goods Cap / Lever

Seal Leakage Tested at % of Set Pressure Final Test Only Pull from SP Seals Intact Open

Replace Next Shut Down Repair Return to SP Build From SP / Tag No Seals Broken Packed

Add Face Seal Conn PreTest Return to SP Change Set Pressure Seals Missing Sealed

Valve Repair Note :

test only

Assembled By : N/A

Mach/Lapp By : N/A

Final Test Information

Cleaned By : N/A

Inspected By : N/A

Test Specifications : Test Medium : Air Test Type : Seat Set Pressure Definition : Pop Code Stamp Applied : None

Set Pressure : 50 Average Test : 51.73 Test 1 : 51.73 Test 2 : 51.73 Test 3 : 51.73

Gauges Used : Primary : CPU Secondary : 150-B Seals : Flange Protector :

Misc Items : ID Tag : Paint : Final Test Date : 3/10/2016 Company : Basin Valve Company

Final Test By : Miguel Garcia Sig : QC Date : 3/10/2016 Company :
 QC Witnessed By : Mike Soto Sig : Install Verified By : Date :
 VR Stamp Number/s : 20

Basin Valve Company
Customer : Southern California Edison

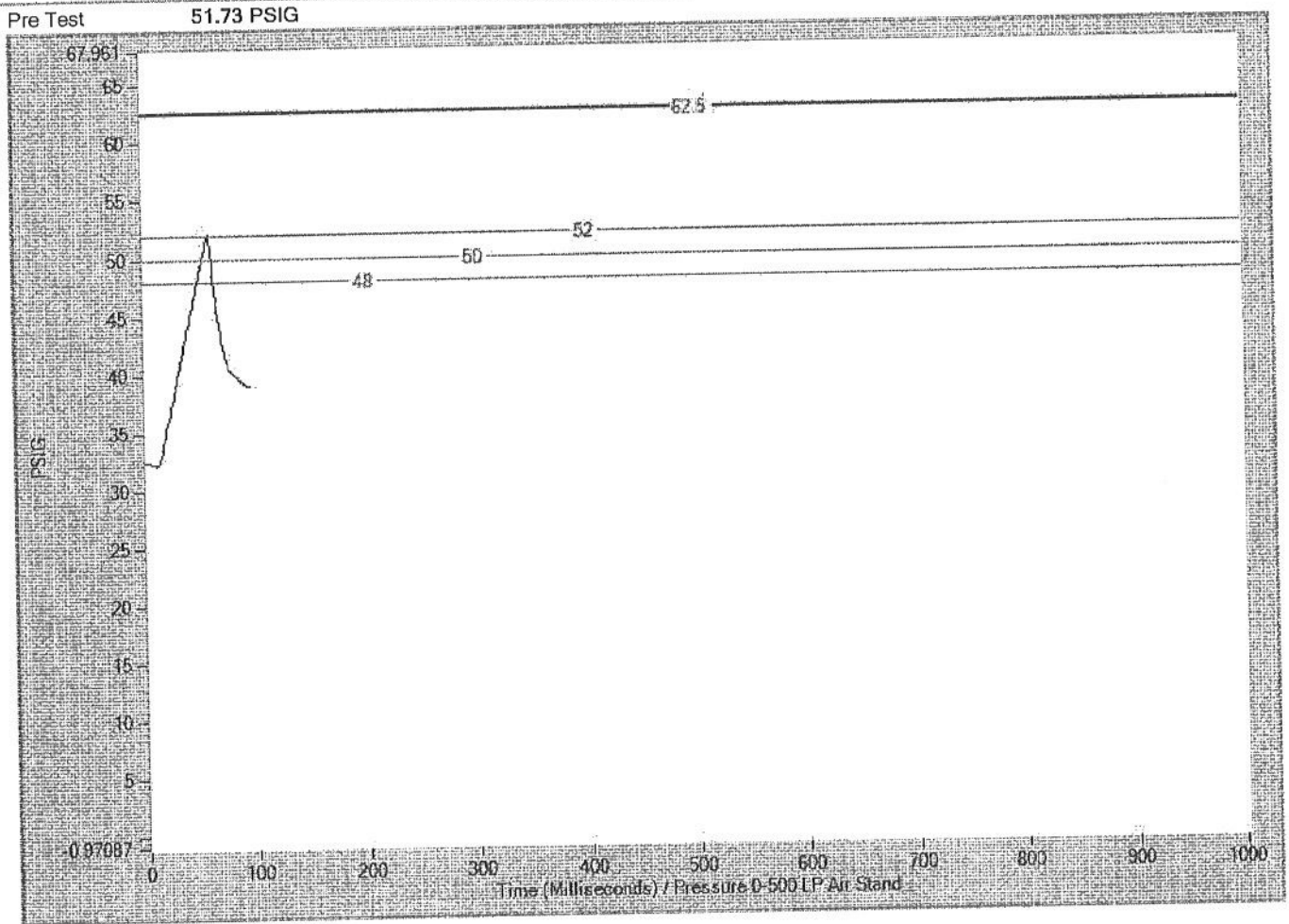
Safety Valve Pre-Test Graph

177646

Repair Nameplate Data		By : BM	Original Nameplate Data		By : BM
Revision : 3	Test Date : 3/10/2016		Set Pressure : 50	Cold Set : 50	Back Press :
Tag Number : PSV-0501-1	Job Number : 1106		Capacity : 137	Units : SCFM	Code Stamp : UV
Manufacturer : CROSBY	Orifice :		Last Repair Nameplate Data By : BM		
Model No : 961202MB	Set Pressure : 50		Set Pressure : 0	Cold Set :	Back Press :
Serial No : 07-08423	Cold Set : 50		Capacity : 0	Units :	Unique ID :
Shop No : 74864026	Back Press : 0		Repair Company :		
Interval : 0	Capacity : 137		Last Repair Date :		
Units : SCFM	Temp Corr : 0		VR : <input type="checkbox"/>		
Inlet : 1 / MNPT	Outlet : 1 / FNPT				

Repair Note : Set Pressure Definition : Pop

test only



Attachment 8

Rule 50 Opacity survey of blackstart emergency generator engine and the gas turbine

Ventura County Air Pollution Control District

Rule 50 - Opacity

Annual Compliance Survey

Facility Name and Address:

McGrath Peaker Generating Station Permit # 07891 – Engine - 111

251 N Harbor Blvd Oxnard CA 93035

Survey Information:

Date: 12/02/016


Time: 0755 hrs to 0800 hrs

Emissions Unit: Waukesha VGF L36GLD Black Start Generator Internal Combustion Engine

Verification:

On 12/02/2016 I conducted an annual Rule 50 Opacity survey of the station's Black Start Generator IC engine exhaust. I did not observe visible emissions for a period or periods aggregating more than three (3) minutes during the period the IC engine was operated.

Chijioke Akunyili – Environmental Specialist

 01/30/2017

Ventura County Air Pollution Control District

Rule 50 - Opacity

Annual Compliance Survey

Facility Name and Address:

McGrath Peaker Generating Station Permit # 07891 – Turbine

251 N Harbor Blvd Oxnard CA 93035

Survey Information:

Date: 12/01/2016

Time: 0930 hrs to 0935 hrs

Emissions Unit: General Electric LM 6000 Gas Turbine Generator

Verification:

On 12/01/2016 I conducted an annual Rule 50 Opacity survey of the station's Black Start Generator IC engine exhaust. I did not observe visible emissions for a period or periods aggregating more than three (3) minutes during the period the IC engine was operated.

Chijioke Akunyili – Environmental Specialist

 01/30/2017

Attachment 9

Coating and solvent usage record

COATING, ADHESIVE, AND SOLVENT USAGE CHART

COMPANY NAME: So Cal Edison McGrath Beach Peaker PERMIT NUMBER: 7891 % EFFICIENCY OF CONTROL EQUIPMENT:
 ADDRESS: 251 N Harbor Blvd Oxnard CA 93035 PREPARED BY (Print Name): Chijioke Akunyili CONVERSION FACTORS:
 TELEPHONE NUMBER: (805)-673-7228 SIGNATURE: 16 Fluid Oz = 1 Pint 4 Quarts = 1 Gallon 1lb =
 PERIOD: FROM January 1 THROUGH December 31 20 2016 TITLE: Environmental Specialist 2 Pints = 1 Quart 1 Gallon = 3.785 Liters 1 lb/g:
Maintain daily logs and submit copies monthly to C.J Akunyili (chijioke.akunyili@scce.com). Call 909.478.1771 for assistance.
FORM 109 MUST BE COMPLETED WITH THIS CHART. SEE BACK PAGE OF THIS FORM FOR ADDITIONAL INSTRUCTIONS
COATING/AEROSOLS/SOLVENT USAGE LOG

NAME, NUMBER, COLOR, TYPE	MANUFACTURER	SIZE (oz)	QUANTITY USED	ROC CONTENT (lb/gal)	ROC (lb)	
Mineral Spirits - Maintenance & Clean-up	PPG	Gal	10	6.55	65.55	
Zok 27 Compressor Cleaner	Zok Industries	Gal	55	0.82	45.1	
WD-40 Aerosol	WD Company	Gal	1.66	1.7	2.8	
S-34 NG Cleaner	Ecolink	Gal	3.5	0.21	0.74	
Cold Galvanized Corrosion Inhibitor	LPS	Gal	2.4	2.78	6.67	
CO Contact Cleaner Aerosol	CRC Industries	Gal	0.43	7.49	3.22	
Totals					124.1	

COATING, ADHESIVE, AND SOLVENT USAGE CHART I

COMPANY NAME: So Cal Edison McGrath Beach Peaker PERMIT NUMBER: 7891 % EFFICIENCY OF CONTROL EQUIPMENT: _____
 ADDRESS: 251 N Harbor Blvd Oxnard CA 93035 PREPARED BY (Print Name): Chijioke Akunyili CONVERSION FACTORS: _____
 TELEPHONE NUMBER: (805)-673-7228 SIGNATURE: _____ 16 Fluid Oz = 1 Pint 4 Quarts = 1 Gallon 1lb = 454 Gra
 PERIOD: FROM Janauary 1 THROUGH December 31 20 2016 TITLE: Environmental Specialist 2 Pints = 1 Quart 1 Gallon = 3.785 Liters 1 lb/gal = 120
 Maintain daily logs and submit copies monthly to C.J. Akunyili (chijioke.akunyili@scce.com), Call 909.478.1771 for assistance.
 FORM 109 MUST BE COMPLETED WITH THIS CHART. SEE BACK PAGE OF THIS FORM FOR ADDITIONAL INSTRUCTIONS
 COATING/AEROSOL/SOLVENT USAGE LOG

NAME, NUMBER, COLOR, TYPE	MANUFACTURER	SIZE (oz)	QUANTITY USED	ROC CONTENT (lb/gal)	ROC (lb)
Transformer Re-coating					
KLF 1-6792 (Kolorsil Gray)	PPG	Gal	15	2.7	40.5
Amerlock 2 VOC (AKZ VOC)	PPG	Gal	1	0.7	0.7
KLF6060 (Tri Polar)	PPG	Gal	15	2.67	40.5
Ammonia Tank Corrosion Re-coating					
Metal Coat - Clear Gloss	Techo Coatings	Gal	2.25	0.83	1.868
Rust Bullet - Epoxy	Techo Coatings	Gal	2	2.29	4.58
Metal Coat - Clear Gloss	Techo Coatings	Gal	2.75	0.83	2.28
HS Poly 100 Polyurethane	Techo Coatings	Gal	1	0.83	0.83
Totals					91.26