

## 1.0 EXECUTIVE SUMMARY

MOSTARDI PLATT conducted a formaldehyde emissions test program for Upper Michigan Energy Resources Corporation (UMERC) on May 12 through May 15, 2020 at F.D. Kuester Generating Station on the Reciprocating Internal Combustion Engine (EURICE) 1, EURICE2, EURICE3, EURICE4, EURICE5, EURICE6, and EURICE7 Outlet Ducts in Negaunee, Michigan. The purpose of the test program was to meet the ongoing compliance demonstration requirements for emission rates in accordance with Renewable Operating Permit MI-ROP-P0797 & Permit to Install MI-PTI-P0797-2020 and the RICE MACT 40 CFR Part 63 Subpart ZZZZ. This report summarizes the results of the test program and test methods used.

The test locations, test dates, and test parameters are summarized below.

<b>TEST INFORMATION</b>		
<b>Test Locations</b>	<b>Test Dates</b>	<b>Test Parameters</b>
EURICE1	May 12, 2020	Formaldehyde (CH <sub>2</sub> O), Moisture (H <sub>2</sub> O), and Oxygen (O <sub>2</sub> )
EURICE2	May 12, 2020	(CH <sub>2</sub> O), (H <sub>2</sub> O), and (O <sub>2</sub> )
EURICE3	May 13, 2020	(CH <sub>2</sub> O), (H <sub>2</sub> O), and (O <sub>2</sub> )
EURICE4	May 13, 2020	(CH <sub>2</sub> O), (H <sub>2</sub> O), and (O <sub>2</sub> )
EURICE5	May 14, 2020	(CH <sub>2</sub> O), (H <sub>2</sub> O), and (O <sub>2</sub> )
EURICE6	May 14, 2020	(CH <sub>2</sub> O), (H <sub>2</sub> O), and (O <sub>2</sub> )
EURICE7	May 15, 2020	(CH <sub>2</sub> O), (H <sub>2</sub> O), and (O <sub>2</sub> )

F. D. Kuester Generating Station electric generation facility includes seven (7) Wärtsilä W18V50SG natural gas-fired, four stroke, lean burn, spark ignition reciprocating internal combustion engines (RICE) coupled to 19,260 kW electric generators, a 1,000 kW natural gas-fired emergency generator, and one natural gas-fired natural gas conditioning heater. The RICE electric generating unit engines utilize pipeline quality natural gas and are equipped with selective catalytic reduction (SCR) for nitrogen oxides (NO<sub>x</sub>) control and oxidation catalyst systems for carbon monoxide (CO), volatile organic compound (VOC), and organic hazardous air pollutant (HAP) control. Each RICE electric generating unit exhausts into a common stack. Testing was done at the outlet duct to isolate the emissions from each unit.

Selected results of the test program are summarized below on a ppmvd @ 15% O<sub>2</sub> basis. A complete summary of emission test results follows the narrative portion of this report.

TEST RESULTS				
Test Location	Date	Test Parameter	Emission Limit	Emission Rate
EURICE1	5/12/2020	Formaldehyde	14 ppmvd @ 15% O <sub>2</sub>	1.22 ppmvd @ 15% O <sub>2</sub>
EURICE2	5/12/2020			1.43 ppmvd @ 15% O <sub>2</sub>
EURICE3	5/13/2020			1.56 ppmvd @ 15% O <sub>2</sub>
EURICE4	5/13/2020			1.92 ppmvd @ 15% O <sub>2</sub>
EURICE5	5/14/2020			1.08 ppmvd @ 15% O <sub>2</sub>
EURICE6	5/14/2020			0.75 ppmvd @ 15% O <sub>2</sub>
EURICE7	5/15/2020			1.37 ppmvd @ 15% O <sub>2</sub>

Operating Data as provided by the plant is included in Appendix A.

The identifications of the individuals associated with the test program are summarized below.

TEST PERSONNEL INFORMATION		
Location	Address	Contact
Test Coordinator	WEC Energy Group, Inc 231 W. Michigan Street Milwaukee, Wisconsin 53203	Mr. Justin Kowalski Senior Environmental Consultant 414-221-2265
Test Facility	Upper Michigan Energy Resources Corporation F.D. Kuester Generating Station 80 Eagle Mills Road Negaunee, MI 49866	justin.kowalski@wecenergygroup.com
Testing Company Representative	Mostardi Platt 888 Industrial Drive Elmhurst, Illinois 60126	Mr. Richard Sollars Senior Project Manager (630) 993-2100 (phone) rsollars@mp-mail.com

The test crew consisted Messrs. K. West, W. Petrovich, R. Simon, and R. Sollars of Mostardi Platt.

## 2.0 TEST METHODOLOGY

Emission testing was conducted following the methods specified in 40CFR60, Appendix A and 40CFR63, Appendix A. Schematics of the test section diagrams and sampling trains used are included in Appendix B and C, respectively. Calculation nomenclature and example calculations are included in Appendix D. Reference method test data can be found in Appendix E.

The following methodology was used during the test program:

### Method 3A Oxygen (O<sub>2</sub>)

CO<sub>2</sub> and O<sub>2</sub> concentrations were measured to determine stack gas molecular weight and emission rates in ppmvd corrected to 15% O<sub>2</sub> in accordance with Method 3A. An ECOM analyzer was used to determine stack gas oxygen. All of the equipment used was calibrated in accordance with the specifications of the Method. Calibration data are presented in Appendix F and copies of gas cylinder certifications are included in Appendix G.

### Method 320 Formaldehyde (HCHO) and Moisture (H<sub>2</sub>O) Determination

The Method 320 sampling and measurement system meets the requirements of US EPA Reference Method 320, "Vapor Phase Organic and Inorganic Emissions by Extractive FTIR," 40CFR63, Appendix A. This method applies to the measurement of combustion gas concentrations. With this method, gas samples are extracted from the sample locations through heated Teflon sample lines to the analyzer.

FTIR technology works on the principle that most gases absorb infrared light. This is true for all compounds with the exception of homonuclear diatomic molecules and noble gases such as: N<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>, He, Ne, and Ar. Vibrations, stretches, bends, and rotations within the bonds of a molecule determine the infrared absorption distinctiveness. The absorption creates a "fingerprint" which is unique to each given compound.

The quantity of infrared light absorbed is proportional to the gas concentration. Most compounds have absorbencies at different infrared frequencies, allowing the simultaneous analysis of multiple compounds at one time. The FTIR software compares each sample spectrum to a user-selected list of calibration references and performs a classical least squares analysis to determine concentration data on a wet volume basis and the spectral residuals for each analyte (the error associated with each measurement). FTIR data was collected using an MKS MultiGas 2030 FTIR spectrometer. The FTIR was equipped with a temperature-controlled, 5.11 meter multi-pass gas cell maintained at 191°C. Gas flows and sampling system pressures were monitored using a rotameter and pressure transducer.

All data was collected at 0.5 cm<sup>-1</sup> resolution. Each spectrum was derived from the coaddition of 62 scans, with a new data point generated approximately every one minute. Analyzer data for each run is present in Appendix E.

SAMPLING SYSTEM PARAMETERS				
MKS Serial #	Sampling Line	Probe Assembly	Particulate Filter Media	Operating Temperatures
110161896	100' 3/8" dia., heated Teflon	Heated 8', 3/8" dia. SS	0.01µ heated borosilicate glass fiber	191°C

QA/QC procedures followed US EPA Method 320. See below for QA/QC procedure details and list of calibration gas standards. All calibration gases were introduced to the analyzer and the sampling system using an instrument grade stainless steel rotameter. All QA/QC procedures were within the acceptance criteria allowance of the applicable EPA methodology. See Appendix F for FTIR QA/QC Data and instrument linearity validations.

FTIR QA/QC PROCEDURES						
QA/QC Specification	Purpose	Calibration Gas Analyte	Delivery	Frequency	Acceptance Criteria	Result
M320: Zero	Verify that the FTIR is free of contaminants & zero the FTIR	Nitrogen (zero)	Direct to FTIR	pre/post test	< MDL or Noise	Pass
M320:Calibration Transfer Standard (CTS) Direct	Verify FTIR linearity, confirm optical path length	Ethylene	Direct to FTIR	pretest	+/- 5% cert. value	Pass
M320: Analyte Direct	Verify FTIR calibration	Acetaldehyde, Methanol, SF6	Direct to FTIR	pretest	+/- 5% cert. value	Pass
M320: CTS Response	Verify system linearity, recovery, response time	Ethylene	Sampling System	Daily, pre/post test	+/- 5% of Direct Measurement	Pass
M320: Zero Response	Verify sampling system has no bias for analytes of interest	Nitrous Oxide with nitrogen balance	Sampling System	pretest	Bias correct data	Pass
M320: Analyte Spike	Verify system ability to deliver and quantify analyte of interest in the presence of effluent gases	Acetaldehyde, Methanol, SF6	Dynamic Addition to Sampling System, 1:10 effluent	Throughout testing – daily	+/- 30% theoretical recovery	Pass

Note: The determined concentrations from direct analyses were used in all system/spike recovery calculations.

CALIBRATION GAS STANDARDS				
Components	Concentration (ppm)	Vendor	Cylinder #	Standard Type
Ethylene	99.32	Airgas	CC420697	Certified Standard-Spec +/- 2%
Acetaldehyde/ Methanol/SF6	199.8 / 209.4 / 5.029	Airgas	CC718379	Certified Standard +/- 2% (Acetaldehyde/Methanol) Certified Standard +/- 5% (SF <sub>6</sub> )
Nitrogen	Zero Gas	Airgas	N/A	UHP Grade

### Analyte Spiking

Acetaldehyde and methanol spiking was performed prior to testing to verify the ability of the sampling system to quantitatively deliver a sample containing acetaldehyde and methanol from the base of the probe to the FTIR. Analyte spiking assures the ability of the FTIR sampling system to recover volatile organics in the presence of effluent gas.

As part of the spiking procedure, samples were measured to determine native acetaldehyde and methanol concentrations to be used in the spike recovery calculations. The analyte spiking gases contained a low concentration of sulfur hexafluoride (SF<sub>6</sub>). The determined SF<sub>6</sub> concentration in the spiked sample was used to calculate the dilution factor of the spike and thus used to calculate

the concentration of the spiked acetaldehyde and methanol. The spike target dilution ratio was 1:10 or less.

The following equation illustrates the percent recovery calculation.

$$DF = \frac{SF_6(spik)}{SF_6(direct)} \quad (\text{Sec. 9.2.3 (3) USEPA Method 320})$$

$$CS = DF * Spike(dir) + Unspike(1 - DF) \quad (\text{Sec. 9.2.3 (4) USEPA Method 320})$$

- DF = Dilution factor of the spike gas
- SF<sub>6(dir)</sub> = SF<sub>6</sub> concentration measured directly in undiluted spike gas
- SF<sub>6(spik)</sub> = Diluted SF<sub>6</sub> concentration measured in a spiked sample
- Spike<sub>dir</sub> = Concentration of the analyte in the spike standard measure by the FTIR directly
- CS = Expected concentration of the spiked samples
- Unspike = Native concentration of analytes in unspiked samples

**Post Collection Data Validation**

As part of the data validation procedure, reference spectra are manually fit to that of the sample spectra and a concentration is determined. The reference spectra are scaled to match the peak amplitude of the sample, providing a scaling factor. The scaling factor multiplied by the reference spectra concentration is used to determine the concentration value for the sample spectra. Sample pressure and temperature corrections are then applied to compute the final sample concentration. The manually calculated results are then compared with the software-generated results. The data is then validated if the two concentrations are within ± 20% agreement. In some cases the percent difference between the two analyses is relatively large, but the absolute concentration difference is minimal. If this is not determined to be the case, then the spectra are reviewed for possible spectral interferences or any other possible causes leading to incorrectly quantified data. See Appendix F FTIR QAQC for manual subtractions.

**Detection Limit**

The detection limit of each analyte was calculated following Annex A2 of ASTM D6348-12 procedure using spectra that contained similar amounts of moisture and carbon dioxide.

Analyte	Detection Limit (ppmv wet)	Detection Limit (%v)
Formaldehyde	0.2	-
Moisture	-	0.1

The spectral residuals for each compound is calculated using the classical least squares analysis. When the residual error exceeds the measured concentration, the compound is considered a non-detect, allowing the residual to verify the detection limit. The spectral residual also permits the analyst to determine if there are possible interferences in the sample matrix.

QA/QC data are found in Appendix F. Copies of gas cylinder certifications are found in Appendix G. All concentration data were recorded on a wet, volume basis. The sample and data collection followed the procedures outlined in Method 320.

### 3.0 TEST RESULT SUMMARIES

Upper Michigan Energy Resources Corporation F. D. Kuester Generating Station EURICE1 Outlet Duct									
Test No.	Date	Start Time	End Time	H <sub>2</sub> O%	O <sub>2</sub> % Correction	O <sub>2</sub> %, dry	Formaldehyde, ppmvw	Formaldehyde, ppmvd	Formaldehyde, ppmvd @ 15% O <sub>2</sub>
1	05/12/20	08:20	09:39	8.98	15.0	12.5	1.25	1.38	0.97
2	05/12/20	10:20	11:19	8.78	15.0	12.5	1.70	1.87	1.31
3	05/12/20	11:45	12:44	8.74	15.0	12.4	1.82	2.00	1.39
<b>Average</b>				8.84	15.0	12.5	1.59	1.75	1.22

Upper Michigan Energy Resources Corporation F. D. Kuester Generating Station EURICE2 Outlet Duct									
Test No.	Date	Start Time	End Time	H <sub>2</sub> O%	O <sub>2</sub> % Correction	O <sub>2</sub> %, dry	Formaldehyde, ppmvw	Formaldehyde, ppmvd	Formaldehyde, ppmvd @ 15% O <sub>2</sub>
1	05/12/20	13:30	14:34	9.11	15.0	12.6	1.82	2.00	1.42
2	05/12/20	14:55	15:54	9.08	15.0	12.3	1.91	2.10	1.44
3	05/12/20	16:15	17:14	9.07	15.0	12.2	1.91	2.10	1.42
<b>Average</b>				9.08	15.0	12.4	1.88	2.06	1.43

Upper Michigan Energy Resources Corporation F. D. Kuester Generating Station EURICE3 Outlet Duct									
Test No.	Date	Start Time	End Time	H <sub>2</sub> O%	O <sub>2</sub> % Correction	O <sub>2</sub> %, dry	Formaldehyde, ppmvw	Formaldehyde, ppmvd	Formaldehyde, ppmvd @ 15% O <sub>2</sub>
1	05/13/20	09:20	10:24	9.11	15.0	12.4	1.97	2.16	1.50
2	05/13/20	10:45	11:44	9.45	15.0	12.3	2.04	2.25	1.55
3	05/13/20	12:00	12:59	9.44	15.0	12.2	2.16	2.39	1.62
<b>Average</b>				9.33	15.0	12.3	2.06	2.27	1.56

Upper Michigan Energy Resources Corporation F. D. Kuester Generating Station EURICE4 Outlet Duct									
Test No.	Date	Start Time	End Time	H <sub>2</sub> O%	O <sub>2</sub> % Correction	O <sub>2</sub> %, dry	Formaldehyde, ppmvw	Formaldehyde, ppmvd	Formaldehyde, ppmvd @ 15% O <sub>2</sub>
1	05/13/20	13:20	14:24	9.47	15.0	12.4	2.54	2.80	1.95
2	05/13/20	15:05	16:04	9.56	15.0	12.3	2.49	2.76	1.89
3	05/13/20	16:21	17:20	9.57	15.0	12.3	2.55	2.82	1.93
<b>Average</b>				9.53	15.0	12.3	2.53	2.79	1.92

Upper Michigan Energy Resources Corporation F. D. Kuester Generating Station EURICE5 Outlet Duct									
Test No.	Date	Start Time	End Time	H <sub>2</sub> O%	O <sub>2</sub> % Correction	O <sub>2</sub> % dry	Formaldehyde, ppmvw	Formaldehyde, ppmvd	Formaldehyde, ppmvd @ 15% O <sub>2</sub>
1	05/14/20	08:05	09:09	9.70	15.0	11.8	1.57	1.74	1.13
2	05/14/20	09:30	10:29	9.67	15.0	11.7	1.51	1.67	1.07
3	05/14/20	10:50	11:49	9.77	15.0	11.7	1.48	1.64	1.05
<b>Average</b>				9.71	15.0	11.7	1.52	1.68	1.08

Upper Michigan Energy Resources Corporation F. D. Kuester Generating Station EURICE6 Outlet Duct									
Test No.	Date	Start Time	End Time	H <sub>2</sub> O%	O <sub>2</sub> % Correction	O <sub>2</sub> % dry	Formaldehyde, ppmvw	Formaldehyde, ppmvd	Formaldehyde, ppmvd @ 15% O <sub>2</sub>
1	05/14/20	12:15	13:19	9.99	15.0	11.6	1.03	1.14	0.72
2	05/14/20	13:40	14:39	10.02	15.0	11.5	1.09	1.21	0.76
3	05/14/20	14:55	15:54	10.14	15.0	11.5	1.09	1.21	0.76
<b>Average</b>				10.05	15.0	11.5	1.07	1.19	0.75

Upper Michigan Energy Resources Corporation F. D. Kuester Generating Station EURICE7 Outlet Duct									
Test No.	Date	Start Time	End Time	H <sub>2</sub> O%	O <sub>2</sub> % Correction	O <sub>2</sub> % dry	Formaldehyde, ppmvw	Formaldehyde, ppmvd	Formaldehyde, ppmvd @ 15% O <sub>2</sub>
1	05/15/20	07:20	08:24	10.29	15.0	11.5	1.90	2.12	1.33
2	05/15/20	08:40	09:39	10.31	15.0	11.6	1.97	2.19	1.39
3	05/15/20	09:55	10:54	10.26	15.0	11.6	1.95	2.17	1.38
<b>Average</b>				10.29	15.0	11.6	1.94	2.16	1.37



## 4.0 CERTIFICATION

MOSTARDI PLATT is pleased to have been of service to Upper Michigan Energy Resources Corporation. If you have any questions regarding this test report, please do not hesitate to contact us at 630-993-2100.

### CERTIFICATION

As project manager, I hereby certify that this test report represents a true and accurate summary of emissions test results and the methodologies employed to obtain those results, and the test program was performed in accordance with the methods specified in this test report.

MOSTARDI PLATT



Program Manager

Richard J. Sollars



Quality Assurance

Scott W. Banach

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## APPENDICES

## Appendix A – Plant Operating Data

**F.D. Kuester Generating Station  
RICE MACT Performance Emissions Testing  
Summary of Operating Data  
May 12 to 15, 2020**

<b>EURICE1</b>				
5/12/2020				
<b>Method 3A and 320</b>				
Start Time	820	1020	1145	
End Time	939	1119	1244	
	Run 1	Run 2	Run 3	Average
Engine (kW)	18,877	18,881	18,872	<b>18,877</b>
Engine natural gas use (pound/hour)	6,708	6,738	6,738	<b>6,728</b>
SCR/Oxidation catalyst inlet temperature) (deg F)	699	700	700	<b>700</b>
Pressure drop across the oxidation catalyst (PSI)	0.14	0.15	0.15	<b>0.15</b>

<b>EURICE2</b>				
5/12/2020				
<b>Method 3A and 320</b>				
Start Time	1330	1455	1615	
End Time	1434	1554	1714	
	Run 1	Run 2	Run 3	Average
Engine (kW)	18,862	18,847	18,861	<b>18,857</b>
Engine natural gas use (pound/hour)	6,634	6,631	6,624	<b>6,630</b>
SCR/Oxidation catalyst inlet temperature) (deg F)	706	704	705	<b>705</b>
Pressure drop across the oxidation catalyst (PSI)	0.13	0.14	0.14	<b>0.13</b>

<b>EURICE3</b>				
5/13/2020				
<b>Method 3A and 320</b>				
Start Time	920	1045	1200	
End Time	1024	1144	1259	
	Run 1	Run 2	Run 3	Average
Engine (kW)	18,859	18,857	18,866	<b>18,861</b>
Engine natural gas use (pound/hour)	6,717	6,728	6,720	<b>6,721</b>
SCR/Oxidation catalyst inlet temperature) (deg F)	705	705	702	<b>704</b>
Pressure drop across the oxidation catalyst (PSI)	0.13	0.13	0.13	<b>0.13</b>

<b>EURICE4</b>				
5/13/2020				
<b>Method 3A and 320</b>				
Start Time	1320	1505	1621	
End Time	1424	1604	1720	
	Run 1	Run 2	Run 3	Average
Engine (kW)	17,456	18,844	18,842	<b>18,381</b>
Engine natural gas use (pound/hour)	6,130	6,591	6,592	<b>6,438</b>
SCR/Oxidation catalyst inlet temperature) (deg F)	722	702	707	<b>710</b>
Pressure drop across the oxidation catalyst (PSI)	0.10	0.11	0.11	<b>0.11</b>

**F.D. Kuester Generating Station  
RICE MACT Performance Emissions Testing  
Summary of Operating Data  
May 12 to 15, 2020**

<b>EURICE5</b>				
5/14/2020				
<b>Method 3A and 320</b>				
Start Time	805	930	1050	
End Time	909	1029	1149	
	<b>Run 1</b>	<b>Run 2</b>	<b>Run 3</b>	<b>Average</b>
Engine (kW)	18,876	18,878	18,865	<b>18,873</b>
Engine natural gas use (pound/hour)	6,663	6,669	6,669	<b>6,667</b>
SCR/Oxidation catalyst inlet temperature) (deg F)	704	702	703	<b>703</b>
Pressure drop across the oxidation catalyst (PSI)	0.13	0.13	0.13	<b>0.13</b>

<b>EURICE6</b>				
5/14/2020				
<b>Method 3A and 320</b>				
Start Time	1215	1340	1455	
End Time	1319	1439	1554	
	<b>Run 1</b>	<b>Run 2</b>	<b>Run 3</b>	<b>Average</b>
Engine (kW)	18,906	18,910	18,916	<b>18,911</b>
Engine natural gas use (pound/hour)	6,732	6,753	6,745	<b>6,743</b>
SCR/Oxidation catalyst inlet temperature) (deg F)	711	708	708	<b>709</b>
Pressure drop across the oxidation catalyst (PSI)	0.13	0.13	0.12	<b>0.12</b>

<b>EURICE7</b>				
5/15/2020				
<b>Method 3A and 320</b>				
Start Time	720	840	955	
End Time	824	939	1054	
	<b>Run 1</b>	<b>Run 2</b>	<b>Run 3</b>	<b>Average</b>
Engine (kW)	18,849	18,864	18,859	<b>18,857</b>
Engine natural gas use (pound/hour)	6,710	6,707	6,696	<b>6,704</b>
SCR/Oxidation catalyst inlet temperature) (deg F)	710	710	710	<b>710</b>
Pressure drop across the oxidation catalyst (PSI)	0.12	0.12	0.12	<b>0.12</b>

Realtime Point ID: 95671

KTR11

SCR Inlet Temperature

Start Time	End Time	Value/Average (Deg F)
05-12-2020 08:00 EDT	05-12-2020 08:05 EDT	698.750
05-12-2020 08:05 EDT	05-12-2020 08:10 EDT	698.709
05-12-2020 08:10 EDT	05-12-2020 08:15 EDT	698.000
05-12-2020 08:15 EDT	05-12-2020 08:20 EDT	698.000
05-12-2020 08:20 EDT	05-12-2020 08:25 EDT	698.000
05-12-2020 08:25 EDT	05-12-2020 08:30 EDT	698.000
05-12-2020 08:30 EDT	05-12-2020 08:35 EDT	698.000
05-12-2020 08:35 EDT	05-12-2020 08:40 EDT	698.000
05-12-2020 08:40 EDT	05-12-2020 08:45 EDT	698.491
05-12-2020 08:45 EDT	05-12-2020 08:50 EDT	699.652
05-12-2020 08:50 EDT	05-12-2020 08:55 EDT	699.800
05-12-2020 08:55 EDT	05-12-2020 09:00 EDT	699.800
05-12-2020 09:00 EDT	05-12-2020 09:05 EDT	699.800
05-12-2020 09:05 EDT	05-12-2020 09:10 EDT	700.097
05-12-2020 09:10 EDT	05-12-2020 09:15 EDT	699.800
05-12-2020 09:15 EDT	05-12-2020 09:20 EDT	699.800
05-12-2020 09:20 EDT	05-12-2020 09:25 EDT	699.800
05-12-2020 09:25 EDT	05-12-2020 09:30 EDT	699.800
05-12-2020 09:30 EDT	05-12-2020 09:35 EDT	700.493
05-12-2020 09:35 EDT	05-12-2020 09:40 EDT	701.420
05-12-2020 09:40 EDT	05-12-2020 09:45 EDT	701.600
05-12-2020 09:45 EDT	05-12-2020 09:50 EDT	701.600
05-12-2020 09:50 EDT	05-12-2020 09:55 EDT	701.600
05-12-2020 09:55 EDT	05-12-2020 10:00 EDT	701.600
05-12-2020 10:00 EDT	05-12-2020 10:05 EDT	700.217
05-12-2020 10:05 EDT	05-12-2020 10:10 EDT	699.800
05-12-2020 10:10 EDT	05-12-2020 10:15 EDT	699.800
05-12-2020 10:15 EDT	05-12-2020 10:20 EDT	699.800
05-12-2020 10:20 EDT	05-12-2020 10:25 EDT	699.800
05-12-2020 10:25 EDT	05-12-2020 10:30 EDT	699.765
05-12-2020 10:30 EDT	05-12-2020 10:35 EDT	699.800
05-12-2020 10:35 EDT	05-12-2020 10:40 EDT	699.792
05-12-2020 10:40 EDT	05-12-2020 10:45 EDT	699.564
05-12-2020 10:45 EDT	05-12-2020 10:50 EDT	699.727
05-12-2020 10:50 EDT	05-12-2020 10:55 EDT	699.800
05-12-2020 10:55 EDT	05-12-2020 11:00 EDT	699.800
05-12-2020 11:00 EDT	05-12-2020 11:05 EDT	699.800
05-12-2020 11:05 EDT	05-12-2020 11:10 EDT	699.800
05-12-2020 11:10 EDT	05-12-2020 11:15 EDT	699.800
05-12-2020 11:15 EDT	05-12-2020 11:20 EDT	699.354
05-12-2020 11:20 EDT	05-12-2020 11:25 EDT	699.800
05-12-2020 11:25 EDT	05-12-2020 11:30 EDT	699.728

Realtime Point ID: 95671  
KTR11  
SCR Inlet Temperature

Start Time	End Time	Value/Average (Deg F)
05-12-2020 11:30 EDT	05-12-2020 11:35 EDT	699.800
05-12-2020 11:35 EDT	05-12-2020 11:40 EDT	699.800
05-12-2020 11:40 EDT	05-12-2020 11:45 EDT	699.800
05-12-2020 11:45 EDT	05-12-2020 11:50 EDT	699.800
05-12-2020 11:50 EDT	05-12-2020 11:55 EDT	699.800
05-12-2020 11:55 EDT	05-12-2020 12:00 EDT	700.501
05-12-2020 12:00 EDT	05-12-2020 12:05 EDT	701.600
05-12-2020 12:05 EDT	05-12-2020 12:10 EDT	701.310
05-12-2020 12:10 EDT	05-12-2020 12:15 EDT	701.600
05-12-2020 12:15 EDT	05-12-2020 12:20 EDT	700.859
05-12-2020 12:20 EDT	05-12-2020 12:25 EDT	700.488
05-12-2020 12:25 EDT	05-12-2020 12:30 EDT	699.800
05-12-2020 12:30 EDT	05-12-2020 12:35 EDT	699.800
05-12-2020 12:35 EDT	05-12-2020 12:40 EDT	699.800
05-12-2020 12:40 EDT	05-12-2020 12:45 EDT	699.800
05-12-2020 12:45 EDT	05-12-2020 12:50 EDT	699.800
05-12-2020 12:50 EDT	05-12-2020 12:55 EDT	699.800
05-12-2020 12:55 EDT	05-12-2020 13:00 EDT	699.800

Realtime Point ID: 97126  
KTR12  
SCR Inlet Temperature

Start Time	End Time	Value/Average (Deg F)
05-12-2020 13:00 EDT	05-12-2020 13:05 EDT	707.000
05-12-2020 13:05 EDT	05-12-2020 13:10 EDT	706.990
05-12-2020 13:10 EDT	05-12-2020 13:15 EDT	706.983
05-12-2020 13:15 EDT	05-12-2020 13:20 EDT	707.000
05-12-2020 13:20 EDT	05-12-2020 13:25 EDT	707.000
05-12-2020 13:25 EDT	05-12-2020 13:30 EDT	707.000
05-12-2020 13:30 EDT	05-12-2020 13:35 EDT	707.000
05-12-2020 13:35 EDT	05-12-2020 13:40 EDT	706.928
05-12-2020 13:40 EDT	05-12-2020 13:45 EDT	706.228
05-12-2020 13:45 EDT	05-12-2020 13:50 EDT	705.303
05-12-2020 13:50 EDT	05-12-2020 13:55 EDT	706.713
05-12-2020 13:55 EDT	05-12-2020 14:00 EDT	705.864
05-12-2020 14:00 EDT	05-12-2020 14:05 EDT	705.261
05-12-2020 14:05 EDT	05-12-2020 14:10 EDT	705.200
05-12-2020 14:10 EDT	05-12-2020 14:15 EDT	705.200
05-12-2020 14:15 EDT	05-12-2020 14:20 EDT	705.200
05-12-2020 14:20 EDT	05-12-2020 14:25 EDT	705.460
05-12-2020 14:25 EDT	05-12-2020 14:30 EDT	705.856
05-12-2020 14:30 EDT	05-12-2020 14:35 EDT	705.200
05-12-2020 14:35 EDT	05-12-2020 14:40 EDT	704.073
05-12-2020 14:40 EDT	05-12-2020 14:45 EDT	704.256
05-12-2020 14:45 EDT	05-12-2020 14:50 EDT	704.664
05-12-2020 14:50 EDT	05-12-2020 14:55 EDT	704.425
05-12-2020 14:55 EDT	05-12-2020 15:00 EDT	705.200
05-12-2020 15:00 EDT	05-12-2020 15:05 EDT	705.200
05-12-2020 15:05 EDT	05-12-2020 15:10 EDT	706.188
05-12-2020 15:10 EDT	05-12-2020 15:15 EDT	705.252
05-12-2020 15:15 EDT	05-12-2020 15:20 EDT	705.200
05-12-2020 15:20 EDT	05-12-2020 15:25 EDT	705.200
05-12-2020 15:25 EDT	05-12-2020 15:30 EDT	704.150
05-12-2020 15:30 EDT	05-12-2020 15:35 EDT	703.400
05-12-2020 15:35 EDT	05-12-2020 15:40 EDT	703.400
05-12-2020 15:40 EDT	05-12-2020 15:45 EDT	703.400
05-12-2020 15:45 EDT	05-12-2020 15:50 EDT	703.400
05-12-2020 15:50 EDT	05-12-2020 15:55 EDT	703.400
05-12-2020 15:55 EDT	05-12-2020 16:00 EDT	703.400
05-12-2020 16:00 EDT	05-12-2020 16:05 EDT	703.400
05-12-2020 16:05 EDT	05-12-2020 16:10 EDT	703.400
05-12-2020 16:10 EDT	05-12-2020 16:15 EDT	703.400
05-12-2020 16:15 EDT	05-12-2020 16:20 EDT	703.400
05-12-2020 16:20 EDT	05-12-2020 16:25 EDT	704.030
05-12-2020 16:25 EDT	05-12-2020 16:30 EDT	703.573



Realtime Point ID: 97126  
KTR12  
SCR Inlet Temperature

Start Time	End Time	Value/Average (Deg F)
05-12-2020 16:30 EDT	05-12-2020 16:35 EDT	703.943
05-12-2020 16:35 EDT	05-12-2020 16:40 EDT	703.869
05-12-2020 16:40 EDT	05-12-2020 16:45 EDT	703.400
05-12-2020 16:45 EDT	05-12-2020 16:50 EDT	703.400
05-12-2020 16:50 EDT	05-12-2020 16:55 EDT	705.010
05-12-2020 16:55 EDT	05-12-2020 17:00 EDT	707.000
05-12-2020 17:00 EDT	05-12-2020 17:05 EDT	707.000
05-12-2020 17:05 EDT	05-12-2020 17:10 EDT	706.019
05-12-2020 17:10 EDT	05-12-2020 17:15 EDT	705.200
05-12-2020 17:15 EDT	05-12-2020 17:20 EDT	706.659
05-12-2020 17:20 EDT	05-12-2020 17:25 EDT	706.075
05-12-2020 17:25 EDT	05-12-2020 17:30 EDT	705.200

Realtime Point ID: 97355

KTR13

SCR Inlet Temperature

Start Time	End Time	Value/Average (Deg F)
05-13-2020 09:00 EDT	05-13-2020 09:05 EDT	705.200
05-13-2020 09:05 EDT	05-13-2020 09:10 EDT	705.200
05-13-2020 09:10 EDT	05-13-2020 09:15 EDT	705.200
05-13-2020 09:15 EDT	05-13-2020 09:20 EDT	705.200
05-13-2020 09:20 EDT	05-13-2020 09:25 EDT	705.200
05-13-2020 09:25 EDT	05-13-2020 09:30 EDT	705.200
05-13-2020 09:30 EDT	05-13-2020 09:35 EDT	705.200
05-13-2020 09:35 EDT	05-13-2020 09:40 EDT	705.200
05-13-2020 09:40 EDT	05-13-2020 09:45 EDT	705.200
05-13-2020 09:45 EDT	05-13-2020 09:50 EDT	705.200
05-13-2020 09:50 EDT	05-13-2020 09:55 EDT	705.200
05-13-2020 09:55 EDT	05-13-2020 10:00 EDT	704.509
05-13-2020 10:00 EDT	05-13-2020 10:05 EDT	704.191
05-13-2020 10:05 EDT	05-13-2020 10:10 EDT	704.481
05-13-2020 10:10 EDT	05-13-2020 10:15 EDT	704.482
05-13-2020 10:15 EDT	05-13-2020 10:20 EDT	705.200
05-13-2020 10:20 EDT	05-13-2020 10:25 EDT	705.200
05-13-2020 10:25 EDT	05-13-2020 10:30 EDT	705.200
05-13-2020 10:30 EDT	05-13-2020 10:35 EDT	705.200
05-13-2020 10:35 EDT	05-13-2020 10:40 EDT	705.200
05-13-2020 10:40 EDT	05-13-2020 10:45 EDT	705.200
05-13-2020 10:45 EDT	05-13-2020 10:50 EDT	705.200
05-13-2020 10:50 EDT	05-13-2020 10:55 EDT	705.200
05-13-2020 10:55 EDT	05-13-2020 11:00 EDT	705.200
05-13-2020 11:00 EDT	05-13-2020 11:05 EDT	705.200
05-13-2020 11:05 EDT	05-13-2020 11:10 EDT	705.200
05-13-2020 11:10 EDT	05-13-2020 11:15 EDT	704.969
05-13-2020 11:15 EDT	05-13-2020 11:20 EDT	703.995
05-13-2020 11:20 EDT	05-13-2020 11:25 EDT	704.094
05-13-2020 11:25 EDT	05-13-2020 11:30 EDT	703.400
05-13-2020 11:30 EDT	05-13-2020 11:35 EDT	703.400
05-13-2020 11:35 EDT	05-13-2020 11:40 EDT	704.302
05-13-2020 11:40 EDT	05-13-2020 11:45 EDT	703.871
05-13-2020 11:45 EDT	05-13-2020 11:50 EDT	703.400
05-13-2020 11:50 EDT	05-13-2020 11:55 EDT	703.400
05-13-2020 11:55 EDT	05-13-2020 12:00 EDT	703.400
05-13-2020 12:00 EDT	05-13-2020 12:05 EDT	702.349
05-13-2020 12:05 EDT	05-13-2020 12:10 EDT	701.600
05-13-2020 12:10 EDT	05-13-2020 12:15 EDT	701.600
05-13-2020 12:15 EDT	05-13-2020 12:20 EDT	701.600
05-13-2020 12:20 EDT	05-13-2020 12:25 EDT	701.600
05-13-2020 12:25 EDT	05-13-2020 12:30 EDT	701.600

Realtime Point ID: 97355  
KTR13  
SCR Inlet Temperature

Start Time	End Time	Value/Average (Deg F)
05-13-2020 12:30 EDT	05-13-2020 12:35 EDT	701.600
05-13-2020 12:35 EDT	05-13-2020 12:40 EDT	701.600
05-13-2020 12:40 EDT	05-13-2020 12:45 EDT	701.600
05-13-2020 12:45 EDT	05-13-2020 12:50 EDT	701.600
05-13-2020 12:50 EDT	05-13-2020 12:55 EDT	701.600
05-13-2020 12:55 EDT	05-13-2020 13:00 EDT	701.600
05-13-2020 13:00 EDT	05-13-2020 13:05 EDT	701.600
05-13-2020 13:05 EDT	05-13-2020 13:10 EDT	701.600
05-13-2020 13:10 EDT	05-13-2020 13:15 EDT	703.059
05-13-2020 13:15 EDT	05-13-2020 13:20 EDT	725.150
05-13-2020 13:20 EDT	05-13-2020 13:25 EDT	746.234
05-13-2020 13:25 EDT	05-13-2020 13:30 EDT	601.026

Realtime Point ID: 98175

KTR14

SCR Inlet Temperature

Start Time	End Time	Value/Average (Deg F)
05-13-2020 13:00 EDT	05-13-2020 13:05 EDT	705.200
05-13-2020 13:05 EDT	05-13-2020 13:10 EDT	705.200
05-13-2020 13:10 EDT	05-13-2020 13:15 EDT	705.200
05-13-2020 13:15 EDT	05-13-2020 13:20 EDT	705.200
05-13-2020 13:20 EDT	05-13-2020 13:25 EDT	705.200
05-13-2020 13:25 EDT	05-13-2020 13:30 EDT	705.200
05-13-2020 13:30 EDT	05-13-2020 13:35 EDT	705.200
05-13-2020 13:35 EDT	05-13-2020 13:40 EDT	716.990
05-13-2020 13:40 EDT	05-13-2020 13:45 EDT	724.752
05-13-2020 13:45 EDT	05-13-2020 13:50 EDT	728.092
05-13-2020 13:50 EDT	05-13-2020 13:55 EDT	725.614
05-13-2020 13:55 EDT	05-13-2020 14:00 EDT	727.385
05-13-2020 14:00 EDT	05-13-2020 14:05 EDT	729.917
05-13-2020 14:05 EDT	05-13-2020 14:10 EDT	729.548
05-13-2020 14:10 EDT	05-13-2020 14:15 EDT	730.351
05-13-2020 14:15 EDT	05-13-2020 14:20 EDT	730.400
05-13-2020 14:20 EDT	05-13-2020 14:25 EDT	730.400
05-13-2020 14:25 EDT	05-13-2020 14:30 EDT	730.400
05-13-2020 14:30 EDT	05-13-2020 14:35 EDT	729.520
05-13-2020 14:35 EDT	05-13-2020 14:40 EDT	616.527
05-13-2020 14:40 EDT	05-13-2020 14:45 EDT	662.240
05-13-2020 14:45 EDT	05-13-2020 14:50 EDT	672.232
05-13-2020 14:50 EDT	05-13-2020 14:55 EDT	687.387
05-13-2020 14:55 EDT	05-13-2020 15:00 EDT	695.562
05-13-2020 15:00 EDT	05-13-2020 15:05 EDT	692.710
05-13-2020 15:05 EDT	05-13-2020 15:10 EDT	696.705
05-13-2020 15:10 EDT	05-13-2020 15:15 EDT	698.217
05-13-2020 15:15 EDT	05-13-2020 15:20 EDT	699.749
05-13-2020 15:20 EDT	05-13-2020 15:25 EDT	699.800
05-13-2020 15:25 EDT	05-13-2020 15:30 EDT	701.393
05-13-2020 15:30 EDT	05-13-2020 15:35 EDT	701.753
05-13-2020 15:35 EDT	05-13-2020 15:40 EDT	703.523
05-13-2020 15:40 EDT	05-13-2020 15:45 EDT	705.200
05-13-2020 15:45 EDT	05-13-2020 15:50 EDT	705.200
05-13-2020 15:50 EDT	05-13-2020 15:55 EDT	705.200
05-13-2020 15:55 EDT	05-13-2020 16:00 EDT	705.200
05-13-2020 16:00 EDT	05-13-2020 16:05 EDT	705.200
05-13-2020 16:05 EDT	05-13-2020 16:10 EDT	705.200
05-13-2020 16:10 EDT	05-13-2020 16:15 EDT	705.200
05-13-2020 16:15 EDT	05-13-2020 16:20 EDT	705.200
05-13-2020 16:20 EDT	05-13-2020 16:25 EDT	706.368
05-13-2020 16:25 EDT	05-13-2020 16:30 EDT	706.771

Realtime Point ID: 98175  
KTR14  
SCR Inlet Temperature

Start Time	End Time	Value/Average (Deg F)
05-13-2020 16:30 EDT	05-13-2020 16:35 EDT	707.000
05-13-2020 16:35 EDT	05-13-2020 16:40 EDT	707.000
05-13-2020 16:40 EDT	05-13-2020 16:45 EDT	706.892
05-13-2020 16:45 EDT	05-13-2020 16:50 EDT	707.000
05-13-2020 16:50 EDT	05-13-2020 16:55 EDT	706.962
05-13-2020 16:55 EDT	05-13-2020 17:00 EDT	706.780
05-13-2020 17:00 EDT	05-13-2020 17:05 EDT	707.000
05-13-2020 17:05 EDT	05-13-2020 17:10 EDT	707.000
05-13-2020 17:10 EDT	05-13-2020 17:15 EDT	707.000
05-13-2020 17:15 EDT	05-13-2020 17:20 EDT	707.000
05-13-2020 17:20 EDT	05-13-2020 17:25 EDT	707.000
05-13-2020 17:25 EDT	05-13-2020 17:30 EDT	707.000

Realtime Point ID: 98698

KTR25

SCR Inlet Temperature

Start Time	End Time	Value/Average (Deg F)
05-14-2020 08:00 EDT	05-14-2020 08:05 EDT	702.998
05-14-2020 08:05 EDT	05-14-2020 08:10 EDT	703.400
05-14-2020 08:10 EDT	05-14-2020 08:15 EDT	703.326
05-14-2020 08:15 EDT	05-14-2020 08:20 EDT	703.382
05-14-2020 08:20 EDT	05-14-2020 08:25 EDT	703.400
05-14-2020 08:25 EDT	05-14-2020 08:30 EDT	703.400
05-14-2020 08:30 EDT	05-14-2020 08:35 EDT	703.400
05-14-2020 08:35 EDT	05-14-2020 08:40 EDT	703.469
05-14-2020 08:40 EDT	05-14-2020 08:45 EDT	705.191
05-14-2020 08:45 EDT	05-14-2020 08:50 EDT	703.638
05-14-2020 08:50 EDT	05-14-2020 08:55 EDT	703.545
05-14-2020 08:55 EDT	05-14-2020 09:00 EDT	703.949
05-14-2020 09:00 EDT	05-14-2020 09:05 EDT	703.400
05-14-2020 09:05 EDT	05-14-2020 09:10 EDT	703.400
05-14-2020 09:10 EDT	05-14-2020 09:15 EDT	703.400
05-14-2020 09:15 EDT	05-14-2020 09:20 EDT	703.400
05-14-2020 09:20 EDT	05-14-2020 09:25 EDT	703.400
05-14-2020 09:25 EDT	05-14-2020 09:30 EDT	703.400
05-14-2020 09:30 EDT	05-14-2020 09:35 EDT	703.400
05-14-2020 09:35 EDT	05-14-2020 09:40 EDT	703.400
05-14-2020 09:40 EDT	05-14-2020 09:45 EDT	702.702
05-14-2020 09:45 EDT	05-14-2020 09:50 EDT	701.727
05-14-2020 09:50 EDT	05-14-2020 09:55 EDT	701.600
05-14-2020 09:55 EDT	05-14-2020 10:00 EDT	701.600
05-14-2020 10:00 EDT	05-14-2020 10:05 EDT	701.600
05-14-2020 10:05 EDT	05-14-2020 10:10 EDT	701.600
05-14-2020 10:10 EDT	05-14-2020 10:15 EDT	701.600
05-14-2020 10:15 EDT	05-14-2020 10:20 EDT	701.600
05-14-2020 10:20 EDT	05-14-2020 10:25 EDT	701.600
05-14-2020 10:25 EDT	05-14-2020 10:30 EDT	703.060
05-14-2020 10:30 EDT	05-14-2020 10:35 EDT	703.400
05-14-2020 10:35 EDT	05-14-2020 10:40 EDT	703.400
05-14-2020 10:40 EDT	05-14-2020 10:45 EDT	703.400
05-14-2020 10:45 EDT	05-14-2020 10:50 EDT	703.400
05-14-2020 10:50 EDT	05-14-2020 10:55 EDT	703.400
05-14-2020 10:55 EDT	05-14-2020 11:00 EDT	702.977
05-14-2020 11:00 EDT	05-14-2020 11:05 EDT	703.239
05-14-2020 11:05 EDT	05-14-2020 11:10 EDT	703.255
05-14-2020 11:10 EDT	05-14-2020 11:15 EDT	702.740
05-14-2020 11:15 EDT	05-14-2020 11:20 EDT	702.819
05-14-2020 11:20 EDT	05-14-2020 11:25 EDT	702.227
05-14-2020 11:25 EDT	05-14-2020 11:30 EDT	701.600

Realtime Point ID: 98698  
KTR25  
SCR Inlet Temperature

Start Time	End Time	Value/Average (Deg F)
05-14-2020 11:30 EDT	05-14-2020 11:35 EDT	701.600
05-14-2020 11:35 EDT	05-14-2020 11:40 EDT	701.600
05-14-2020 11:40 EDT	05-14-2020 11:45 EDT	701.936
05-14-2020 11:45 EDT	05-14-2020 11:50 EDT	703.400
05-14-2020 11:50 EDT	05-14-2020 11:55 EDT	703.400
05-14-2020 11:55 EDT	05-14-2020 12:00 EDT	703.400

Realtime Point ID: 97734

KTR26

SCR Inlet Temperature

Start Time	End Time	Value/Average (Deg F)
05-14-2020 12:00 EDT	05-14-2020 12:05 EDT	728.144
05-14-2020 12:05 EDT	05-14-2020 12:10 EDT	721.311
05-14-2020 12:10 EDT	05-14-2020 12:15 EDT	717.518
05-14-2020 12:15 EDT	05-14-2020 12:20 EDT	714.731
05-14-2020 12:20 EDT	05-14-2020 12:25 EDT	713.929
05-14-2020 12:25 EDT	05-14-2020 12:30 EDT	712.210
05-14-2020 12:30 EDT	05-14-2020 12:35 EDT	710.743
05-14-2020 12:35 EDT	05-14-2020 12:40 EDT	710.600
05-14-2020 12:40 EDT	05-14-2020 12:45 EDT	710.600
05-14-2020 12:45 EDT	05-14-2020 12:50 EDT	710.600
05-14-2020 12:50 EDT	05-14-2020 12:55 EDT	709.964
05-14-2020 12:55 EDT	05-14-2020 13:00 EDT	709.423
05-14-2020 13:00 EDT	05-14-2020 13:05 EDT	708.800
05-14-2020 13:05 EDT	05-14-2020 13:10 EDT	708.800
05-14-2020 13:10 EDT	05-14-2020 13:15 EDT	708.800
05-14-2020 13:15 EDT	05-14-2020 13:20 EDT	708.800
05-14-2020 13:20 EDT	05-14-2020 13:25 EDT	708.800
05-14-2020 13:25 EDT	05-14-2020 13:30 EDT	708.800
05-14-2020 13:30 EDT	05-14-2020 13:35 EDT	708.800
05-14-2020 13:35 EDT	05-14-2020 13:40 EDT	708.800
05-14-2020 13:40 EDT	05-14-2020 13:45 EDT	708.800
05-14-2020 13:45 EDT	05-14-2020 13:50 EDT	708.632
05-14-2020 13:50 EDT	05-14-2020 13:55 EDT	708.747
05-14-2020 13:55 EDT	05-14-2020 14:00 EDT	708.800
05-14-2020 14:00 EDT	05-14-2020 14:05 EDT	708.800
05-14-2020 14:05 EDT	05-14-2020 14:10 EDT	708.800
05-14-2020 14:10 EDT	05-14-2020 14:15 EDT	708.800
05-14-2020 14:15 EDT	05-14-2020 14:20 EDT	708.800
05-14-2020 14:20 EDT	05-14-2020 14:25 EDT	708.800
05-14-2020 14:25 EDT	05-14-2020 14:30 EDT	708.658
05-14-2020 14:30 EDT	05-14-2020 14:35 EDT	707.139
05-14-2020 14:35 EDT	05-14-2020 14:40 EDT	707.000
05-14-2020 14:40 EDT	05-14-2020 14:45 EDT	707.000
05-14-2020 14:45 EDT	05-14-2020 14:50 EDT	706.855
05-14-2020 14:50 EDT	05-14-2020 14:55 EDT	706.884
05-14-2020 14:55 EDT	05-14-2020 15:00 EDT	707.000
05-14-2020 15:00 EDT	05-14-2020 15:05 EDT	707.256
05-14-2020 15:05 EDT	05-14-2020 15:10 EDT	708.800
05-14-2020 15:10 EDT	05-14-2020 15:15 EDT	708.726
05-14-2020 15:15 EDT	05-14-2020 15:20 EDT	708.436
05-14-2020 15:20 EDT	05-14-2020 15:25 EDT	707.736
05-14-2020 15:25 EDT	05-14-2020 15:30 EDT	708.588



Realtime Point ID: 97734  
KTR26  
SCR Inlet Temperature

Start Time	End Time	Value/Average (Deg F)
05-14-2020 15:30 EDT	05-14-2020 15:35 EDT	708.800
05-14-2020 15:35 EDT	05-14-2020 15:40 EDT	708.670
05-14-2020 15:40 EDT	05-14-2020 15:45 EDT	707.072
05-14-2020 15:45 EDT	05-14-2020 15:50 EDT	707.400
05-14-2020 15:50 EDT	05-14-2020 15:55 EDT	707.000
05-14-2020 15:55 EDT	05-14-2020 16:00 EDT	706.784
05-14-2020 16:00 EDT	05-14-2020 16:05 EDT	707.000
05-14-2020 16:05 EDT	05-14-2020 16:10 EDT	705.659
05-14-2020 16:10 EDT	05-14-2020 16:15 EDT	706.116

Realtime Point ID: 98512

KTR27

SCR Inlet Temperature

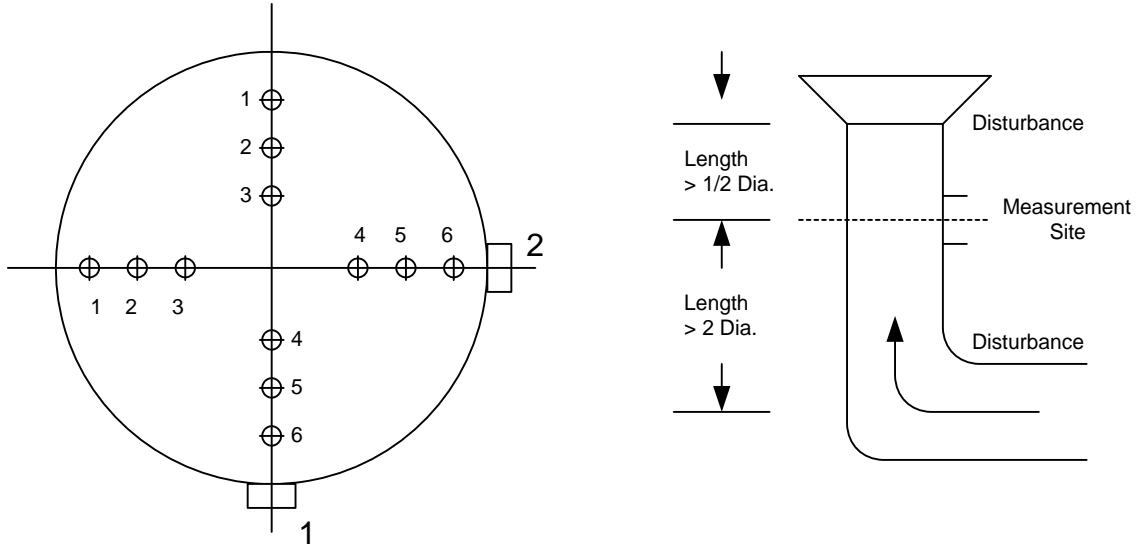
Start Time	End Time	Value/Average (Deg F)
05-15-2020 07:00 EDT	05-15-2020 07:05 EDT	707.038
05-15-2020 07:05 EDT	05-15-2020 07:10 EDT	708.042
05-15-2020 07:10 EDT	05-15-2020 07:15 EDT	708.800
05-15-2020 07:15 EDT	05-15-2020 07:20 EDT	708.800
05-15-2020 07:20 EDT	05-15-2020 07:25 EDT	708.800
05-15-2020 07:25 EDT	05-15-2020 07:30 EDT	708.800
05-15-2020 07:30 EDT	05-15-2020 07:35 EDT	709.992
05-15-2020 07:35 EDT	05-15-2020 07:40 EDT	710.600
05-15-2020 07:40 EDT	05-15-2020 07:45 EDT	710.600
05-15-2020 07:45 EDT	05-15-2020 07:50 EDT	710.600
05-15-2020 07:50 EDT	05-15-2020 07:55 EDT	710.600
05-15-2020 07:55 EDT	05-15-2020 08:00 EDT	710.378
05-15-2020 08:00 EDT	05-15-2020 08:05 EDT	709.340
05-15-2020 08:05 EDT	05-15-2020 08:10 EDT	710.477
05-15-2020 08:10 EDT	05-15-2020 08:15 EDT	708.881
05-15-2020 08:15 EDT	05-15-2020 08:20 EDT	709.817
05-15-2020 08:20 EDT	05-15-2020 08:25 EDT	710.196
05-15-2020 08:25 EDT	05-15-2020 08:30 EDT	710.600
05-15-2020 08:30 EDT	05-15-2020 08:35 EDT	710.600
05-15-2020 08:35 EDT	05-15-2020 08:40 EDT	710.600
05-15-2020 08:40 EDT	05-15-2020 08:45 EDT	710.600
05-15-2020 08:45 EDT	05-15-2020 08:50 EDT	710.310
05-15-2020 08:50 EDT	05-15-2020 08:55 EDT	709.547
05-15-2020 08:55 EDT	05-15-2020 09:00 EDT	710.600
05-15-2020 09:00 EDT	05-15-2020 09:05 EDT	710.600
05-15-2020 09:05 EDT	05-15-2020 09:10 EDT	709.137
05-15-2020 09:10 EDT	05-15-2020 09:15 EDT	708.800
05-15-2020 09:15 EDT	05-15-2020 09:20 EDT	708.800
05-15-2020 09:20 EDT	05-15-2020 09:25 EDT	708.800
05-15-2020 09:25 EDT	05-15-2020 09:30 EDT	708.800
05-15-2020 09:30 EDT	05-15-2020 09:35 EDT	708.800
05-15-2020 09:35 EDT	05-15-2020 09:40 EDT	709.574
05-15-2020 09:40 EDT	05-15-2020 09:45 EDT	708.800
05-15-2020 09:45 EDT	05-15-2020 09:50 EDT	708.800
05-15-2020 09:50 EDT	05-15-2020 09:55 EDT	709.299
05-15-2020 09:55 EDT	05-15-2020 10:00 EDT	709.631
05-15-2020 10:00 EDT	05-15-2020 10:05 EDT	709.359
05-15-2020 10:05 EDT	05-15-2020 10:10 EDT	708.800
05-15-2020 10:10 EDT	05-15-2020 10:15 EDT	709.556
05-15-2020 10:15 EDT	05-15-2020 10:20 EDT	710.600
05-15-2020 10:20 EDT	05-15-2020 10:25 EDT	710.600
05-15-2020 10:25 EDT	05-15-2020 10:30 EDT	709.094

Realtime Point ID: 98512  
KTR27  
SCR Inlet Temperature

Start Time	End Time	Value/Average (Deg F)
05-15-2020 10:30 EDT	05-15-2020 10:35 EDT	709.057
05-15-2020 10:35 EDT	05-15-2020 10:40 EDT	710.364
05-15-2020 10:40 EDT	05-15-2020 10:45 EDT	710.600
05-15-2020 10:45 EDT	05-15-2020 10:50 EDT	710.600
05-15-2020 10:50 EDT	05-15-2020 10:55 EDT	710.600
05-15-2020 10:55 EDT	05-15-2020 11:00 EDT	710.600
05-15-2020 11:00 EDT	05-15-2020 11:05 EDT	710.054
05-15-2020 11:05 EDT	05-15-2020 11:10 EDT	710.207
05-15-2020 11:10 EDT	05-15-2020 11:15 EDT	710.600

## Appendix B - Test Section Diagram

# STRATIFICATION TRAVERSE FOR ROUND DUCTS



Job: Upper Michigan Energy Resources Corporation  
F.D. Kuester Generating Station

Date: May 12 through 15, 2020

Test Locations: EURICE1, EURICE2, EURICE3, EURICE4, EURICE5, EURICE6, and  
EURICE7 Outlet Ducts (identical)

Duct Diameter: 5.29 Feet

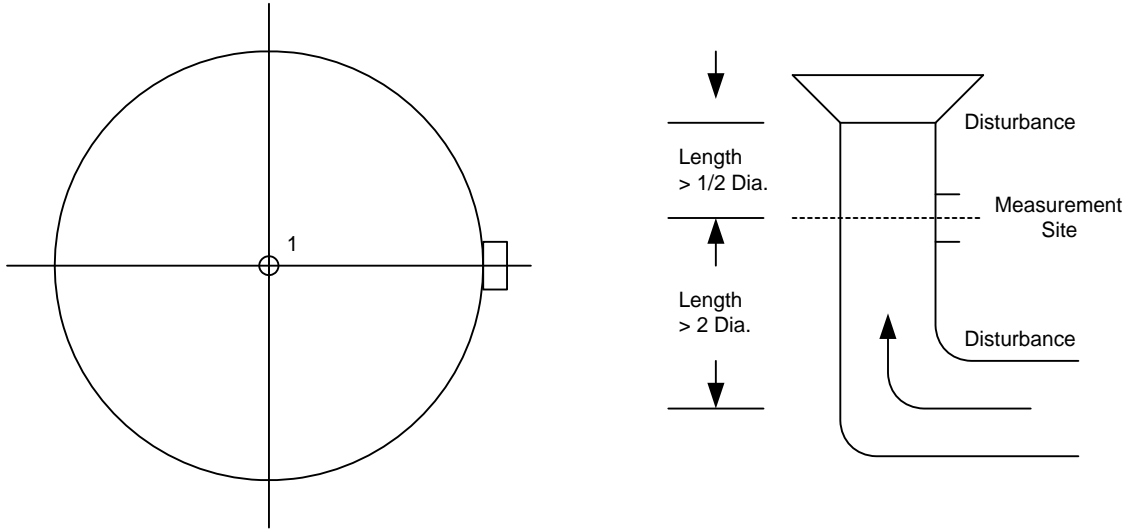
Duct Area: 21.979 Square Feet

No. Points Across Diameter: 6

No. of Ports: 2

Port Length: 8.0 Inches

## GASEOUS TRAVERSE FOR ROUND DUCTS



Job: Upper Michigan Energy Resources Corporation  
F.D. Kuester Generating Station

Date: May 12 through 15, 2020

Test Location: EURICE1, EURICE2, EURICE3, EURICE4, EURICE5, EURICE6, and  
EURICE7 Outlet Ducts (identical)

Duct Diameter: 5.29 Feet

Duct Area: 21.979 Square Feet

No. Points Across Diameter: 1

No. of Ports: 1

Port Length: 8.0 Inches