

# TITLE V APPLICATION REVIEW

Minor Modification  
Project #: N-1114096

Engineer: James Harader  
Date: July 23, 2012

Facility Number: N-355  
Facility Name: General Mills  
Mailing Address: 2000 W Turner Road  
Lodi, CA 95242

Contact Name: Wade Broughton  
Phone: (209) 334-7090

Responsible Official: Jason Schierling  
Title: Plant Manager

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## I. PROPOSAL

General Mills is proposing a Title V minor permit modification to incorporate Authority to Construct N-355-21-7 into the existing Title V operating permit. Authority to Construct N-355-21-7 authorizes the modification of a turbine to add a selective catalytic reduction system and to reduce the NO<sub>x</sub> emission limit to 5 ppmvd @ 15% O<sub>2</sub> for District Rule 4703 compliance. This proposal did not result in an increase in NO<sub>x</sub>, CO, VOC, PM<sub>10</sub>, or SO<sub>x</sub> emissions.

The purpose of this evaluation is to identify all applicable requirements, determine if the facility will comply with the applicable requirements and to provide the legal and factual basis for the proposed revisions.

## II. FACILITY LOCATION

This facility is located at 2000 W Turner Road in Lodi, CA.

## III. EQUIPMENT DESCRIPTION

**N-355-21-8:** 3.48 MW COGENERATION SYSTEM CONSISTING OF AN ALLISON MODEL 501 KB GAS TURBINE WITH A 16 MMBTU/HR DUCT BURNER SYSTEM ALL SERVED BY A SELECTIVE CATALYTIC REDUCTION SYSTEM, AND AN ELECTRIC MOTOR STARTER

#### IV. SCOPE OF EPA AND PUBLIC REVIEW

This change to a Title V permit is considered to be a minor modification and, as such, requires no public review.

#### V. APPLICABLE REQUIREMENTS

District Rule 2520, Federally Mandated Operating Permits (Adopted June 21, 2001)

#### VI. DESCRIPTION OF PROPOSED MODIFICATIONS

N-355-21-8

The following tables summarize the proposed modifications to the turbine permit.

Modified Conditions			
Previous TV PTO Condition #	ATC Condition #	New TV PTO Condition #	Proposed Changes to Conditions
8	13	9	The NOx emission limit was limited to 5 ppmvd @ 15 %O <sub>2</sub> , except during startup and shutdown periods.
9	11	7	Emission limits for VOC, SOx, and PM10 were added to the permit, while the existing CO emission limit was retained.
10,11	17	13	The definitions of startup and shutdown were consolidated into a single condition and were revised to reflect the installation of the SCR system.
17	19,23,24,25	15,19,20,21	The testing frequency and test methods were split into separate conditions. The ATC required an initial source test within 60 days of startup, which will be satisfied prior to the issuance of the new TV permit. There was no changes to the requirements.
3	30	26	The condition that specifies requirements if the unit is fired on non PUC-Quality natural gas was revised to clarify that the requirements apply if not firing PUC-quality natural gas.
24,25,26	38,39	34,35	Excess NOx emissions were redefined based on the new control system parameters, and the reporting requirement was rewritten. The monitor downtime definition was consolidated into one of the new conditions.
28	40	36	The recordkeeping requirements for startup and shutdown periods was revised to clarify what records must be kept.

**Removed Conditions**

<b>Previous TV PTO Condition #</b>	<b>Proposed Changes to Conditions</b>
12	This condition defines "reduced load period". The applicant did not request relief from the NOx limit during reduced load periods; therefore, this condition has been removed.
13,14	Conditions #13 and #14 limited the daily NOx and SOx emissions from the unit. These limits are greater than the potential to emit for this equipment. Therefore, these conditions have been removed.
20,21,22	These conditions require the water to fuel ratio be monitored during the performance test. The ammonia injection rate is more reflective of compliance since the SCR system was added. Therefore, this condition was removed from the permit.
31	The permit shield for 40 CFR Subpart GG was removed, since Subpart GG and the conditions ensuring compliance have both been revised after the permit shield was issued.

**Added Conditions**

<b>ATC Condition #</b>	<b>New TV PTO Condition #</b>	<b>Proposed Changes to Conditions</b>
12	8	A condition limiting the ammonia slip to 10 ppmvd @ 15% O <sub>2</sub> was added to the permit.
14	10	A condition limiting startup emissions to 35 ppmvd NOx @ 15% O <sub>2</sub> was added to the permit.
15	11	A condition limiting the startup and shutdown duration to 2 hours per event was added to the permit.
16	12	A condition limiting the combined daily and annual startup and shutdown hours was added to the permit.
18	14	A condition requiring the control system be in operation and emissions be minimized as much as technically feasible was added to the permit.
26	22	A condition specifying the appropriate ammonia test method was added to the permit.
29	25	A condition specifying that the continuous monitoring systems and devices must be installed and operation prior to conducting performance tests was added to the permit.
32	28	A condition specifying that ammonia must be injected whenever the selective catalytic reduction system catalyst exceeds the minimum ammonia injection temperature recommended by the manufacturer was added to the permit.
33,34,35,36,37	29,30,31,32,33	Conditions specifying the ammonia injection rate, NOx, and CO monitoring requirements were added to the permit.
42	38	A condition requiring records of water to fuel injection, ammonia injection rate, and portable analyzer measurements was added to the permit.
43	39	A condition requiring records to be kept for a period of five years was added to the permit.

<b>ATC Conditions that were not Added</b>	
<b>ATC Condition #</b>	<b>Proposed Changes to Conditions</b>
1	This condition requires the facility to submit an application to modify the TV permit in accordance with the timeframes and procedures of District Rule 2520. This requirement has not been included on the new permit.
2	This condition required Permit to Operate N-355-22-0 be cancelled prior to implementation of the Authority to Construct. This condition will be satisfied and is not required on the new permit.
4 and 5	These conditions already appear on the facility-wide permit. Therefore, they have not been included on the new permit.

## **VII. COMPLIANCE**

In accordance with Rule 2520, 3.20, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or Conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or Condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and Conditions include;
  - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
  - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

In accordance with Rule 2520, the application meets the procedural requirements of section 11.4 by including;

1. A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
2. The source's suggested draft permit; and
3. Certification by a responsible official that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used.

## **VIII. ATTACHMENTS**

- A. Proposed Modified Title V Operating Permit N-355-21-8
- B. Authority to Construct N-355-21-7
- C. Title V Compliance Certification Form
- D. Previous Title V Operating Permit N-355-21-6

# ATTACHMENT A

Proposed Modified Title V Operating Permit  
N-355-21-8

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-355-21-8

**EXPIRATION DATE:** 04/30/2016

**EQUIPMENT DESCRIPTION:**

3.48 MW COGENERATION SYSTEM CONSISTING OF AN ALLISON MODEL 501 KB GAS TURBINE WITH A 16 MMBTU/HR DUCT BURNER SYSTEM ALL SERVED BY A SELECTIVE CATALYTIC REDUCTION SYSTEM, AND AN ELECTRIC MOTOR STARTER

## PERMIT UNIT REQUIREMENTS

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1. {2256} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit
2. Sulfur compound emissions shall not exceed 0.2% by volume, 2,000 ppmv, on a dry basis averaged over 15 consecutive minutes. [40 CFR 60.333(a); District Rule 4801, County Rule 407 (San Joaquin)] Federally Enforceable Through Title V Permit
3. Water must be injected directly into the turbine's primary combustion zone at a water-to-fuel ratio of 0.8 to 1. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The owner or operator shall operate and maintain in calibration a system which continuously measures and records: control system operating parameters, elapsed time of operation of the turbine, and the fuel consumption and the ratio of water to fuel being fired in the turbine. [40 CFR 60.334(a) and District Rule 4703, 6.2.2] Federally Enforceable Through Title V Permit
5. Water injection system supply at the inlet to the turbine shall have an operational flow meter. The flow meter shall be equipped with a flow totalizer. [District Rule 2201] Federally Enforceable Through Title V Permit
6. This unit shall be fired exclusively on PUC-quality natural gas as defined in 40 CFR 60.331(u) which has a total sulfur content of less than or equal to 1.0 gr/100 scf. [40 CFR 60.333(b), District Rule 4201, County 407 (San Joaquin)] Federally Enforceable Through Title V Permit
7. Emissions from the gas turbine and duct burner system shall not exceed any of the following limits: 200 ppmvd CO @ 15% O<sub>2</sub>; 0.0066 lb-PM<sub>10</sub>/MMBtu; 0.0021 lb-VOC/MMBtu (referenced as methane); and 0.00285 lb-SO<sub>x</sub>/MMBtu (referenced as SO<sub>2</sub>). The CO emission limit is based on a 3-hour average. [District Rules 2201 and 4703]
8. Ammonia slip (NH<sub>3</sub>) emissions shall not exceed 10 ppmvd @ 15% O<sub>2</sub>. [District Rule 2201]
9. Except during startup and shutdown periods, emissions from the gas turbine and duct burner system shall not exceed 5 ppmvd NO<sub>x</sub> @ 15% O<sub>2</sub>, based on a 3-hour average. [District Rules 2201 and 4703, and 40 CFR 60.332(c)]
10. During startup and shutdown periods, emissions from the gas turbine and duct burner system shall not exceed 35 ppmvd NO<sub>x</sub> @ 15% O<sub>2</sub>. [District Rules 2201 and 4703]
11. The duration of each startup and each shutdown shall not exceed 2 hours per event. [District Rules 2201 and 4703]
12. The total combined duration of startup and shutdowns shall not exceed 3 hours in any one day and shall not exceed 156 hours in any one calendar year. [District Rules 2201 and 4703]
13. Startup shall be defined as the period of time during which a unit is brought from a shutdown status to its SCR operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown shall be defined as the period of time during which a unit is taken from an operational to non-operational status as the fuel supply to the unit is completely turned off. [District Rules 2201 and 4703]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

14. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown periods. [District Rule 4703]
15. Source testing to demonstrate compliance with the NO<sub>x</sub>, CO, and NH<sub>3</sub> emission limits of the gas turbine system shall be conducted at least once every twelve months. The 3-run tests shall be performed at four evenly spaced load points in the normal operating range of the gas turbine. [40 CFR 60.335(a), (b)(2) and District Rules 1081 and 4703]
16. {2276} Any gas turbine with an intermittently operated auxiliary burner shall demonstrate compliance with the auxiliary burner both on and off. [40 CFR 60.335(b) and District Rule 4703, 6.3.3] Federally Enforceable Through Title V Permit
17. The owner or operator shall be required to conform to the sampling facilities, test methods and procedures described in District Rule 1081. [District Rule 1081, 3.0 and 6.0] Federally Enforceable Through Title V Permit
18. The District must be notified 30 days prior to any performance testing and a test plan shall be submitted for District approval 15 days prior to such testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
19. NO<sub>x</sub> emissions (referenced as NO<sub>2</sub>) shall be determined using EPA Method 7E or EPA Method 20. The test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. [District Rules 1081 and 4703, 40 CFR 60.335(b)(1)]
20. CO emissions shall be determined using EPA Method 10 or EPA Method 10B. [District Rules 1081 and 4703]
21. Oxygen content of the exhaust gas shall be determined by using EPA Method 3, EPA Method 3A, or EPA Method 20. [District Rules 2201 and 4703]
22. Ammonia (NH<sub>3</sub>) emissions shall be determined using BAAQMD Method ST-1B. [District Rules 1081, 2201 and 4102]
23. {2277} The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [40 CFR 60.332(a) and (b) and District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit
24. Performance testing shall be witnessed by authorized District personnel. Test results must be submitted to the District within 60 days of performance testing. [District Rule 1081, 7.2 and 7.3] Federally Enforceable Through Title V Permit
25. All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [District Rule 4703 and 40 CFR 60.13(b)]
26. If this unit is not fired on PUC-regulated natural gas, the sulfur content of each natural gas fuel source shall be tested weekly to determine compliance with the fuel sulfur content limit. Upon the completion of eight consecutive weekly tests that demonstrate compliance with the fuel sulfur content limit, the sulfur content testing may be conducted on a monthly schedule. If any test shows non-compliance with the fuel sulfur content limit while on a monthly testing schedule, the testing schedule shall return to weekly testing until eight consecutive weeks demonstrate compliance with the fuel sulfur content limit. [District Rule 2201 and 40 CFR 60.334(h)(3)]
27. If this unit is fired on PUC-regulated natural gas, then the owner or operator shall maintain copies of the natural gas bills on file. [District Rule 2520, 9.3.2]
28. Ammonia shall be injected whenever the selective catalytic reduction system catalyst temperature exceeds the minimum ammonia injection temperature recommended by the manufacturer. [District Rule 2201]
29. During initial performance testing, the ammonia injection rate shall be monitored concurrently with each testing run to establish acceptable values and ranges that provide a reasonable assurance of ongoing compliance with the emissions limitations stated in this permit. The minimum ammonia injection rate(s) demonstrated during the initial NO<sub>x</sub> source test to result in compliance with the NO<sub>x</sub> emission limits shall be imposed as a condition in the Permit to Operate. [District Rules 2201 and 4703]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

30. If the ammonia injection rate is less than the minimum ammonia injection rate demonstrated during the initial compliance test, the permittee shall return the ammonia injection rate above the minimum ammonia injection rate established during compliance testing as soon as possible, but no longer than eight hours after detection. If the ammonia injection rate is not returned above the minimum ammonia injection rate established during compliance testing within eight hours, the permittee shall notify the District within the following one hour and conduct a source test within 60 days of the first exceedance to demonstrate compliance with the applicable emission limits at the reduced ammonia injection rate. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 2201 and 4703]
31. The permittee shall monitor and record the stack concentration of NO<sub>x</sub> (as NO<sub>2</sub>), CO, and O<sub>2</sub> weekly using a portable emissions monitor that meets District specifications. If compliance with the NO<sub>x</sub> and CO emissions is demonstrated for eight consecutive weeks, then the monitoring frequency will be reduced to monthly. If deviations are observed in two consecutive months, monitoring shall revert to weekly until eight consecutive weeks show no deviations. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within one day of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the week if on a weekly monitoring schedule. [District Rules 2201 and 4703]
32. If the NO<sub>x</sub> and/or CO concentrations, as measured by the permittee with a portable emissions monitor, exceed the permitted emission limits, the permittee shall notify the District and return the NO<sub>x</sub> and CO concentrations to the permitted emission limits as soon as possible but no longer than eight hours after detection. If the permittee's portable emission monitor readings continue to exceed the permitted emissions limits after eight hours, the permittee shall notify the District within the following one hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703]
33. Compliance with ammonia emission limit shall be demonstrated utilizing one of the following procedures: 1) The permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. 2) The permittee may utilize a District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O<sub>2</sub>. The permittee shall submit a detailed calculation protocol or monitoring plan for District Approval prior to operation of the turbine with the SCR system. 3) The permittee may utilize draeger tubes to measure the ammonia in the exhaust stack. If this option is chosen, the ammonia monitoring using draeger tubes shall be conducted when performing portable emission monitoring for NO<sub>x</sub>, CO, and O<sub>2</sub> emissions. [District Rules 2201 and 4102]
34. The owner or operator shall submit a report of NO<sub>x</sub> excess emissions and periods of monitor downtime to the APCO semi-annually, and this report shall be postmarked by the 30th day following the end of each 6-month period. [40 CFR 60.334(j)(5)]
35. NO<sub>x</sub> excess emissions shall be defined as any unit operating hour for which the average water to fuel injection rate, as measured by the continuous monitoring system, falls below the water to fuel ratio specified in this permit, including during startup and shutdown. NO<sub>x</sub> excess emissions shall also be defined as any 4-hour rolling unit operating hour in which the average ammonia injection rate falls below the minimum ammonia injection rate(s) specified in this permit, not including startup or shutdown. NO<sub>x</sub> monitor downtime shall be defined as any operating hour during which the water to fuel ratio or ammonia injection rate is either not recorded or is invalid. [40 CFR 60.334(j)(1)]
36. The permittee shall maintain records of the duration of each startup and shutdown, the total combined duration of all startup and shutdowns for each operating day, and the total combined duration of all startup and shutdowns for each calendar year. [District Rules 2201 and 4703]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

37. Owner or operator shall maintain a stationary gas turbine system operating log that includes, on a daily basis, the actual local time start-up and stop time, length and reason for reduced load periods, total hours of operation, type and quantity of fuel used. [District Rule 4703, 6.2.6] Federally Enforceable Through Title V Permit
38. The owner or operator of the stationary gas turbine and duct burner system shall maintain records of the following: (1) Water to fuel injection continuous monitoring system measurements, (2) Ammonia injection rate monitoring system measurements, and (3) Periodic NOx, CO, and O2 portable emission monitor measurements. [District Rules 2201 and 4703]
39. All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2201 and 4703]
40. The requirements of 40 CFR 72.6 (b) do not apply to this source because only non-Title IV sources can qualify to use the applicable template. A permit shield is granted from this requirement. [District Rules 2520, 13.2 and 4703, 6.2] Federally Enforceable Through Title V Permit
41. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of Rule 407 (San Joaquin). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
42. Compliance with permit conditions in the Title V permit shall be deemed compliance with District Rules 1081 (as amended 12/16/93), Section 3.0, 6.0, 7.1, 7.2, and 7.3 and 4201 (as amended 12/17/92). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

DRAFT

# ATTACHMENT B

Authority to Construct  
N-355-21-7



**COPY**

## AUTHORITY TO CONSTRUCT

**PERMIT NO:** N-355-21-7

**ISSUANCE DATE:** 10/13/2011

**LEGAL OWNER OR OPERATOR:** GENERAL MILLS OPERATIONS, INC  
**MAILING ADDRESS:** ATTN: ACCOUNTS PAYABLE  
PO BOX 1263  
MINNEAPOLIS, MN 55440

**LOCATION:** WADE BROUGHTON  
2000 W TURNER ROAD  
LODI, CA 95240

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF A TURBINE TO ADD THE DUCT BURNER LISTED ON N-355-22 TO THIS PERMIT, TO ADD A SELECTIVE CATALYTIC REDUCTION SYSTEM, AND TO LOWER THE NOX EMISSION FACTOR TO 5 PPMVD @ 15% O2 FOR DISTRICT RULE 4703 COMPLIANCE SUCH THAT THE EQUIPMENT POST-PROJECT EQUIPMENT DESCRIPTION BECOMES: 3.48 MW COGENERATION SYSTEM CONSISTING OF AN ALLISON MODEL 501 KB GAS TURBINE WITH A 16 MMBTU/HR DUCT BURNER SYSTEM ALL SERVED BY A SELECTIVE CATALYTIC REDUCTION SYSTEM, AND AN ELECTRIC MOTOR STARTER

## CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. Upon the implementation of this Authority to Construct, Permit to Operate N-355-22 shall be cancelled. [District Rule 2201]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit
4. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
5. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

N-355-21-7: Oct 13 2011 8:31AM - HARADERJ - Joint Inspection NOT Required

6. Sulfur compound emissions shall not exceed 0.2% by volume, 2,000 ppmv, on a dry basis averaged over 15 consecutive minutes. [40 CFR 60.333(a); District Rule 4801, County Rule 407 (San Joaquin)] Federally Enforceable Through Title V Permit
7. Water must be injected directly into the turbine's primary combustion zone at a water-to-fuel ratio of 0.8 to 1. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The owner or operator shall operate and maintain in calibration a system which continuously measures and records: control system operating parameters, elapsed time of operation of the turbine, and the fuel consumption and the ratio of water to fuel being fired in the turbine. [40 CFR 60.334(a) and District Rule 4703, 6.2.2] Federally Enforceable Through Title V Permit
9. Water injection system supply at the inlet to the turbine shall have an operational flow meter. The flow meter shall be equipped with a flow totalizer. [District Rule 2201] Federally Enforceable Through Title V Permit
10. This unit shall be fired exclusively on PUC-quality natural gas as defined in 40 CFR 60.331(u) which has a total sulfur content of less than or equal to 1.0 gr/100 scf. [40 CFR 60.333(b), District Rule 4201, County 407 (San Joaquin)] Federally Enforceable Through Title V Permit
11. Emissions from the gas turbine and duct burner system shall not exceed any of the following limits: 200 ppmvd CO @ 15% O<sub>2</sub>; 0.0066 lb-PM<sub>10</sub>/MMBtu; 0.0021 lb-VOC/MMBtu (referenced as methane); and 0.00285 lb-SO<sub>x</sub>/MMBtu (referenced as SO<sub>2</sub>). The CO emission limit is based on a 3-hour average. [District Rules 2201 and 4703]
12. Ammonia slip (NH<sub>3</sub>) emissions shall not exceed 10 ppmvd @ 15% O<sub>2</sub>. [District Rule 2201]
13. Except during startup and shutdown periods, emissions from the gas turbine and duct burner system shall not exceed 5 ppmvd NO<sub>x</sub> @ 15% O<sub>2</sub>, based on a 3-hour average. [District Rules 2201 and 4703, and 40 CFR 60.332(c)]
14. During startup and shutdown periods, emissions from the gas turbine and duct burner system shall not exceed 35 ppmvd NO<sub>x</sub> @ 15% O<sub>2</sub>. [District Rules 2201 and 4703]
15. The duration of each startup and each shutdown shall not exceed 2 hours per event. [District Rules 2201 and 4703]
16. The total combined duration of startup and shutdowns shall not exceed 3 hours in any one day and shall not exceed 156 hours in any one calendar year. [District Rules 2201 and 4703]
17. Startup shall be defined as the period of time during which a unit is brought from a shutdown status to its SCR operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown shall be defined as the period of time during which a unit is taken from an operational to non-operational status as the fuel supply to the unit is completely turned off. [District Rules 2201 and 4703]
18. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown periods. [District Rule 4703]
19. Source testing to demonstrate compliance with the NO<sub>x</sub>, CO, and NH<sub>3</sub> emission limits of the gas turbine system shall be conducted within 60 days of initial startup, and at least once every twelve months thereafter. The 3-run tests shall be performed at four evenly spaced load points in the normal operating range of the gas turbine. [40 CFR 60.335(a), (b)(2) and District Rules 1081 and 4703]
20. Any gas turbine with an intermittently operated auxiliary burner shall demonstrate compliance with the auxiliary burner both on and off. [40 CFR 60.335(b) and District Rule 4703, 6.3.3] Federally Enforceable Through Title V Permit
21. The owner or operator shall be required to conform to the sampling facilities, test methods and procedures described in District Rule 1081. [District Rule 1081, 3.0 and 6.0] Federally Enforceable Through Title V Permit
22. The District must be notified 30 days prior to any performance testing and a test plan shall be submitted for District approval 15 days prior to such testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
23. NO<sub>x</sub> emissions (referenced as NO<sub>2</sub>) shall be determined using EPA Method 7E or EPA Method 20. The test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. [District Rules 1081 and 4703, 40 CFR 60.335(b)(1)]
24. CO emissions shall be determined using EPA Method 10 or EPA Method 10B. [District Rules 1081 and 4703]

CONDITIONS CONTINUE ON NEXT PAGE

25. Oxygen content of the exhaust gas shall be determined by using EPA Method 3, EPA Method 3A, or EPA Method 20. [District Rules 2201 and 4703]
26. Ammonia (NH<sub>3</sub>) emissions shall be determined using BAAQMD Method ST-1B. [District Rules 1081, 2201 and 4102]
27. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [40 CFR 60.332(a) and (b) and District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit
28. Performance testing shall be witnessed by authorized District personnel. Test results must be submitted to the District within 60 days of performance testing. [District Rule 1081, 7.2 and 7.3] Federally Enforceable Through Title V Permit
29. All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [District Rule 4703 and 40 CFR 60.13(b)]
30. If this unit is not fired on PUC-regulated natural gas, the sulfur content of each natural gas fuel source shall be tested weekly to determine compliance with the fuel sulfur content limit. Upon the completion of eight consecutive weekly tests that demonstrate compliance with the fuel sulfur content limit, the sulfur content testing may be conducted on a monthly schedule. If any test shows non-compliance with the fuel sulfur content limit while on a monthly testing schedule, the testing schedule shall return to weekly testing until eight consecutive weeks demonstrate compliance with the fuel sulfur content limit. [District Rule 2201 and and 40 CFR 60.334(h)(3)]
31. If this unit is fired on PUC-regulated natural gas, then the owner or operator shall maintain copies of the natural gas bills on file. [District Rule 2520, 9.3.2]
32. Ammonia shall be injected whenever the selective catalytic reduction system catalyst temperature exceeds the minimum ammonia injection temperature recommended by the manufacturer. [District Rule 2201]
33. During initial performance testing, the ammonia injection rate shall be monitored concurrently with each testing run to establish acceptable values and ranges that provide a reasonable assurance of ongoing compliance with the emissions limitations stated in this permit. The minimum ammonia injection rate(s) demonstrated during the initial NO<sub>x</sub> source test to result in compliance with the NO<sub>x</sub> emission limits shall be imposed as a condition in the Permit to Operate. [District Rules 2201 and 4703]
34. If the ammonia injection rate is less than the minimum ammonia injection rate demonstrated during the initial compliance test, the permittee shall return the ammonia injection rate above the minimum ammonia injection rate established during compliance testing as soon as possible, but no longer than eight hours after detection. If the ammonia injection rate is not returned above the minimum ammonia injection rate established during compliance testing within eight hours, the permittee shall notify the District within the following one hour and conduct a source test within 60 days of the first exceedance to demonstrate compliance with the applicable emission limits at the reduced ammonia injection rate. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 2201 and 4703]
35. The permittee shall monitor and record the stack concentration of NO<sub>x</sub> (as NO<sub>2</sub>), CO, and O<sub>2</sub> weekly using a portable emissions monitor that meets District specifications. If compliance with the NO<sub>x</sub> and CO emissions is demonstrated for eight consecutive weeks, then the monitoring frequency will be reduced to monthly. If deviations are observed in two consecutive months, monitoring shall revert to weekly until eight consecutive weeks show no deviations. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within one day of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the week if on a weekly monitoring schedule. [District Rules 2201 and 4703]

CONDITIONS CONTINUE ON NEXT PAGE

36. If the NO<sub>x</sub> and/or CO concentrations, as measured by the permittee with a portable emissions monitor, exceed the permitted emission limits, the permittee shall notify the District and return the NO<sub>x</sub> and CO concentrations to the permitted emission limits as soon as possible but no longer than eight hours after detection. If the permittee's portable emission monitor readings continue to exceed the permitted emissions limits after eight hours, the permittee shall notify the District within the following one hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703]
37. Compliance with ammonia emission limit shall be demonstrated utilizing one of the following procedures: 1) The permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. 2) The permittee may utilize a District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O<sub>2</sub>. The permittee shall submit a detailed calculation protocol or monitoring plan for District Approval prior to operation of the turbine with the SCR system. 3) The permittee may utilize draeger tubes to measure the ammonia in the exhaust stack. If this option is chosen, the ammonia monitoring using draeger tubes shall be conducted when performing portable emission monitoring for NO<sub>x</sub>, CO, and O<sub>2</sub> emissions. [District Rules 2201 and 4102]
38. The owner or operator shall submit a report of NO<sub>x</sub> excess emissions and periods of monitor downtime to the APCO semi-annually, and this report shall be postmarked by the 30th day following the end of each 6-month period. [40 CFR 60.334(j)(5)]
39. NO<sub>x</sub> excess emissions shall be defined as any unit operating hour for which the average water to fuel injection rate, as measured by the continuous monitoring system, falls below the water to fuel ratio specified in this permit, including during startup and shutdown. NO<sub>x</sub> excess emissions shall also be defined as any 4-hour rolling unit operating hour in which the average ammonia injection rate falls below the minimum ammonia injection rate(s) specified in this permit, not including startup or shutdown. NO<sub>x</sub> monitor downtime shall be defined as any operating hour during which the water to fuel ratio or ammonia injection rate is either not recorded or is invalid. [40 CFR 60.334(j)(1)]
40. The permittee shall maintain records of the duration of each startup and shutdown, the total combined duration of all startup and shutdowns for each operating day, and the total combined duration of all startup and shutdowns for each calendar year. [District Rules 2201 and 4703]
41. Owner or operator shall maintain a stationary gas turbine system operating log that includes, on a daily basis, the actual local time start-up and stop time, length and reason for reduced load periods, total hours of operation, type and quantity of fuel used. [District Rule 4703, 6.2.6] Federally Enforceable Through Title V Permit
42. The owner or operator of the stationary gas turbine and duct burner system shall maintain records of the following: (1) Water to fuel injection continuous monitoring system measurements, (2) Ammonia injection rate monitoring system measurements, and (3) Periodic NO<sub>x</sub>, CO, and O<sub>2</sub> portable emission monitor measurements. [District Rules 2201 and 4703]
43. All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2201 and 4703]
44. The requirements of 40 CFR 72.6 (b) do not apply to this source because only non-Title IV sources can qualify to use the applicable template. A permit shield is granted from this requirement. [District Rules 2520, 13.2 and 4703, 6.2] Federally Enforceable Through Title V Permit
45. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of Rule 407 (San Joaquin). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
46. Compliance with permit conditions in the Title V permit shall be deemed compliance with District Rules 1081 (as amended 12/16/93), Section 3.0, 6.0, 7.1, 7.2, and 7.3 and 4201 (as amended 12/17/92). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

# ATTACHMENT C

Title V Compliance Certification Form

**San Joaquin Valley  
Unified Air Pollution Control District**

**TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM**

**I. TYPE OF PERMIT ACTION (Check appropriate box)**

- SIGNIFICANT PERMIT MODIFICATION                       ADMINISTRATIVE AMENDMENT  
 MINOR PERMIT MODIFICATION

COMPANY NAME: <b>General Mills Operations</b>	FACILITY ID: N - 355
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: <b>General Mills Operations</b>	
3. Agent to the Owner:	

**II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):**

- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

  
 Signature of Responsible Official

December 19, 2011  
 Date

Jason Schierling  
 Name of Responsible Official (please print)

Plant Manager  
 Title of Responsible Official (please print)

# ATTACHMENT D

Previous Title V Operating Permit  
N-355-21-6

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-355-21-6

**EXPIRATION DATE:** 04/30/2016

**EQUIPMENT DESCRIPTION:**

3.48 MW COGENERATION SYSTEM CONSISTING OF AN ALLISON MODEL 501 KB GAS TURBINE WITH AN ELECTRIC MOTOR STARTER

## PERMIT UNIT REQUIREMENTS

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1. This unit shall be fired exclusively on PUC-quality natural gas as defined in 40 CFR 60.331(u) which has a total sulfur content of less than or equal to 1.0 gr/100 scf. [40 CFR 60.333(b), District Rule 4201, County Rules 404 (Madera), 406 (Fresno), and 407 (Kings, Merced, San Joaquin, Tulare, Kern, and Stanislaus County)] Federally Enforceable Through Title V Permit
2. Sulfur compound emissions shall not exceed 0.2% by volume, 2,000 ppmv, on a dry basis averaged over 15 consecutive minutes. [40 CFR 60.333(a); District Rule 4801, County Rules 404 (Madera), 406 (Fresno), and 407 (Kings, Merced, San Joaquin, Tulare, Kern, and Stanislaus)] Federally Enforceable Through Title V Permit
3. The sulfur content of each fuel source shall be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract or (ii) monitored weekly using ASTM Methods D4084, D5504, D6228, or Gas Processors Association Standard 2377. If sulfur content is less than 1.0 gr/100 scf for 8 consecutive weeks, then the Monitoring frequency shall be every six months. If any six month monitoring show an exceedance, weekly monitoring shall resume. [40 CFR 60.334(h)(3) and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
4. If this unit is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit
6. Water must be injected directly into the turbine's primary combustion zone at a water-to-fuel ratio of 0.8 to 1. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Water injection system supply at the inlet to the turbine shall have an operational flow meter. The flow meter shall be equipped with a flow totalizer. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The owner or operator shall not operate the gas turbine under load conditions, excluding the start-up, shutdown or reduced load period, which results in the measured NOx emissions concentration exceeding 35.0 ppmvd @ 15% O2 referenced as NO2. [District Rules 2201, and 4703, 5.1.2] Federally Enforceable Through Title V Permit
9. The owner or operator shall not operate the gas turbine under load conditions, excluding the start-up, shutdown or reduced load period, which results in the measured CO emissions concentration exceeding 200 ppmvd @ 15% O2. [District Rule 4703, 5.2] Federally Enforceable Through Title V Permit
10. Start-up shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. [District Rule 4703, 3.24] Federally Enforceable Through Title V Permit
11. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4703, 3.21] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. Reduced Load Period shall be defined as the time during which a gas turbine is operated at less than rated capacity in order to change the exhaust gas diverter gate not exceeding one hour. [District Rule 4703, 3.19] Federally Enforceable Through Title V Permit
13. Total NOx emissions from the cogeneration system (Permit N-355-21) and the duct burner system (Permit N-355-22) shall not exceed 250 pounds during any one day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Total SOx emissions from the cogeneration system (Permit N-355-21) and the duct burner system (Permit N-355-22) shall not exceed 218 pounds during any one day. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The owner or operator shall be required to conform to the sampling facilities, test methods and procedures described in District Rule 1081. [District Rule 1081, 3.0 and 6.0] Federally Enforceable Through Title V Permit
16. The District must be notified 30 days prior to any performance testing and a test plan shall be submitted for District approval 15 days prior to such testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
17. Performance testing shall be conducted annually or as required by the Air Pollution Control Officer to measure NOx and CO emission concentrations using the following test methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A, or 20 for Oxygen content of the exhaust gas. The 3-run tests shall be performed at four evenly spaced load points in the normal operating range of the gas turbine. The measured NOx concentrations shall be averaged over a three hour period, using consecutive 15-minute sampling periods. [40 CFR 60.335(a), (b)(2) and District Rule 4703, 6.3.1, 6.3.2 and 6.4] Federally Enforceable Through Title V Permit
18. Any gas turbine with an intermittently operated auxiliary burner shall demonstrate compliance with the auxiliary burner both on and off. [40 CFR 60.335(b) and District Rule 4703, 6.3.3] Federally Enforceable Through Title V Permit
19. The HHV and LHV of the fuel combusted shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [40 CFR 60.332(a) and (b) and District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit
20. During the performance testing, the steam or water to fuel ratio shall be monitored concurrently with each testing run to establish acceptable values and ranges. This performance data may be supplemented with engineering analyses, design specifications, manufacturer's recommendations, and other relevant information to define acceptable parametric ranges more precisely. [40 CFR 60.334(g) and 40 CFR 60.335(b)(3)] Federally Enforceable Through Title V Permit
21. Performance testing shall be witnessed by authorized District personnel. Test results must be submitted to the District within 60 days of performance testing. [District Rule 1081, 7.2 and 7.3] Federally Enforceable Through Title V Permit
22. Permittee shall submit to the APCO the information correlating the control system operating parameters to the associated measured NOx output. [District Rule 4703, 6.2.3] Federally Enforceable Through Title V Permit
23. The owner or operator shall operate and maintain in calibration a system which continuously measures and records: control system operating parameters, elapsed time of operation of the turbine, and the fuel consumption and the ratio of water to fuel being fired in the turbine. [40 CFR 60.334(a) and District Rule 4703, 6.2.2] Federally Enforceable Through Title V Permit
24. The owner or operator shall submit a semi-annual excess NOx emissions and monitor down time report to the APCO. Excess emissions shall be reported for all periods of operation, including startup, shutdown and malfunction. The report, post marked by 30th day following the end of every other calendar quarter, shall include the following: Time intervals, average steam or water to fuel ratio, turbine load, nature and the cause of excess emissions (if known), and corrective actions taken and preventive measures adopted. [40 CFR 60.334(j), (j)(5) and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
25. Excess emissions shall be defined as any operating hour for which steam or water to fuel ratio, as measured by continuous monitoring system, falls below established steam or water to fuel ratio. Any operating hour in which no steam or water is injected into turbine shall also be considered an excess emissions. [40 CFR 60.334(J)(1)(i)(A)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

26. Monitor downtime shall be defined as any unit operating hour in which water or steam is injected into the turbine, but essential parametric data needed to determine the steam or water to fuel ratio are unavailable or invalid. [40 CFR 60.334(j)(1)(i)(B)] Federally Enforceable Through Title V Permit
27. Owner or operator shall maintain a stationary gas turbine system operating log that includes, on a daily basis, the actual local time start-up and stop time, length and reason for reduced load periods, total hours of operation, type and quantity of fuel used. [District Rule 4703, 6.2.6] Federally Enforceable Through Title V Permit
28. Operator performing start-up or shutdown of the turbine shall keep records of the duration of start-up or shutdown. [District Rule 4703, 6.2.8] Federally Enforceable Through Title V Permit
29. The requirements of 40 CFR 72.6 (b) do not apply to this source because only non-Title IV sources can qualify to use the applicable template. A permit shield is granted from this requirement. [District Rules 2520, 13.2 and 4703, 6.2] Federally Enforceable Through Title V Permit
30. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following subsumed requirements: Rules 404 (Madera), 406 (Fresno), and 407 (Kings, Merced, San Joaquin, Tulare, Kern, and Stanislaus). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
31. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332 (a)(1), (a)(2), 60.333 (b); 60.334(b), (g), (h)(3), (j), (j)(1)(i)(A), (j)(1)(i)(B), and (j)(5); 60.335(a), (b)(2), (b)(3); and District Rule 4703 (as amended 4/25/02), Sections 5.1.2.1, 5.2, 6.2.2, 6.4, and 6.2.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
32. Compliance with permit conditions in the Title V permit shall be deemed compliance with District Rules 1081 (as amended 12/16/93), Section 3.0, 6.0, 7.1, 7.2, and 7.3 and 4201 (as amended 12/17/92). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.