

Engineering Review Template for Renewable Fuel Standard (RFS)

Renewable Fuel Producer Company Name:

4-digit Part 80 Company ID:

Facility Name:

5-digit Part 80 Facility ID:

Facility Address:

Date of On-Site Visit (MM/DD/YYYY):

Per §80.1450(b)(2): “An independent third-party engineering review and written report and verification of the information provided pursuant to paragraph (b)(1) of this section. The report and verification shall be based upon a site visit and review of relevant documents and shall separately identify each item required by paragraph (b)(1) of this section, describe how the independent third-party evaluated the accuracy of the information provided, state whether the independent third-party agrees with the information provided, and identify any exceptions between the independent third-party’s findings and the information provided.”

Affirmation of third-party independence per §80.1450(b)(2)(ii):

“To be considered an independent third-party under this paragraph (b)(2):

- (A) The third-party shall not be operated by the renewable fuel producer or foreign ethanol producer, or any subsidiary or employee of the renewable fuel producer or foreign ethanol producer.
- (B) The third-party shall be free from any interest in the renewable fuel producer or foreign ethanol producer's business.
- (C) The renewable fuel producer or foreign ethanol producer shall be free from any interest in the third-party's business.
- (D) Use of a third-party that is debarred, suspended, or proposed for debarment pursuant to the Government-wide Debarment and Suspension regulations, 40 CFR part 32, or the Debarment, Suspension and Ineligibility provisions of the Federal Acquisition Regulations, 48 CFR, part 9, subpart 9.4, shall be deemed noncompliance with the requirements of this section.”

Signature of the professional engineer who conducted the on-site visit and completed this engineering review affirming that he/she is an independent third-party per §80.1450(b)(2)(ii):

X

Date (MM/DD/YYYY):

Printed name and stamp (if applicable) of third-party independent professional engineer:

In the following section, the PE must respond to the questions for the items that apply to the facility being reviewed. The independent third-party professional engineer (PE) may enter "N/A" for non-applicable items. **Note:**

- The PE must be specific in describing how he/she evaluated the accuracy of the materials submitted to EPA by the renewable fuel producer. As part of this description, the PE must detail the specific observations made during the site visit and cite the documents that were reviewed for each applicable item below. If the description is not sufficiently detailed or appropriate, then EPA will request more information for those items.
- Per §80.1450(i)(2), "Any document submitted to EPA under this section must be submitted in English, or shall include an English translation."
- EPA encourages renewable fuel producers to submit the materials required under 80.1450(b)(1) to EPA in the appendix to the engineering review rather than submit these materials in a second shipment. When using a commercial delivery service, do not use the U.S. Mail address (or vice versa) as your mail will be delayed, may be returned to you, or may never reach our offices. Be aware that sending materials via U.S. Mail will require an irradiation process and could possibly delay delivery.

<p>For Commercial Delivery: U.S. Environmental Protection Agency William Jefferson Clinton Building - North Mail Code 6405A, Room 6520V; (202) 343-9038 1200 Pennsylvania Ave NW Washington, DC 20004</p>	<p>For U.S. Mail: U.S. Environmental Protection Agency Mail Code 6405A 1200 Pennsylvania Avenue, NW Washington, DC 20460</p>
--	---

1. §80.1450(b)(1): "A description of the types of renewable fuels or ethanol that the producer intends to produce at the facility and that the facility is capable of producing without significant modifications to the existing facility."
 - a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?

2. §80.1450(b)(1)(i): "A list of all the feedstocks the facility is capable of utilizing without significant modification to the existing facility."
 - a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?

3. §80.1450(b)(1)(ii): "A description of the facility's renewable fuel or ethanol production processes."
 - a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?

4. §80.1450(b)(1)(ii)(A): "For registrations indicating production of cellulosic biofuel (D codes 3 or 7) from feedstocks other than biogas (including through pathways in rows K, L, M, and N of Table 1 to §80.1426), the producer must demonstrate the ability to convert cellulosic components of feedstock into fuel by providing all of the following:
 - (1) A process diagram with all relevant unit processes labeled and a designation of which unit process is capable of performing cellulosic treatment, including required inputs and outputs at each step.
 - (2) A description of the cellulosic biomass treatment process, including required inputs and outputs used at each step.
 - (3) A description of the mechanical, chemical and biochemical mechanisms by which cellulosic materials can be converted to biofuel products."

- a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?
5. §80.1450(b)(1)(iii): "The type of co-products produced with each type of renewable fuel or ethanol."
 - a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?
6. §80.1450(b)(1)(iv): "A process heat fuel supply plan that includes all of the following:
 - (A) For all process heat fuel, provide all the following information:
 - (1) Each type of process heat fuel used at the facility.
 - (2) Name and address of the company supplying each process heat fuel to the renewable fuel or foreign ethanol facility." [See 80.1450(b)(1)(iv)(B) for additional registration requirements for biogas used as process heat fuel]
 - a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?
7. §80.1450(b)(1)(v): "The following records that support the facility's baseline volume as defined in §80.1401 or, for foreign ethanol facilities, their production volume:
 - (A) For all facilities except those described in paragraph (b)(1)(v)(B) of this section, copies of the most recent applicable air permits issued by the U.S. Environmental Protection Agency, state, local air pollution control agencies, or foreign governmental agencies and that govern the construction and/or operation of the renewable fuel or foreign ethanol facility.
 - (B) For facilities claiming the exemption described in §80.1403(c) or (d), applicable air permits issued by the U.S. Environmental Protection Agency, state, local air pollution control agencies, or foreign governmental agencies that govern the construction and/or operation of the renewable fuel facility that were: (1) Issued or revised no later than December 19, 2007, for facilities described in §80.1403(c); or (2) Issued or revised no later than December 31, 2009, for facilities described in §80.1403(d).
 - (C) (1) For all facilities, copies of documents demonstrating each facility's actual peak capacity as defined in §80.1401 if the maximum rated annual volume output of renewable fuel is not specified in the air permits specified in paragraphs (b)(1)(v)(A) and (b)(1)(v)(B) of this section, as appropriate.
(2) For facilities not claiming the exemption described in §80.1403(c) or (d) which are exempt from air permit requirements and for which insufficient production records exist to establish actual peak capacity, copies of documents demonstrating the facility's nameplate capacity, as defined in §80.1401.
 - (D) For all facilities producing renewable electricity or other renewable fuel from biogas, submit all relevant information in §80.1426(f)(10) or (11), including:
 - (1) Copies of all contracts or affidavits, as applicable, that follow the track of the biogas/CNG/LNG or renewable electricity from its original source, to the producer that processes it into renewable fuel, and finally to the end user that will actually use the renewable electricity or the renewable CNG/LNG for transportation purposes.
 - (2) Specific quantity, heat content, and percent efficiency of transfer, as applicable, and any conversion factors, for the renewable fuel derived from biogas."

Note: A conversion calculation must be provided if the capacity listed in the production records, air permits, or nameplate capacity calculation is not given in gallons/year.

- a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
Please indicate the exact location of the capacity figure in any air permits provided.
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?
8. §80.1450(b)(1)(vi) "For facilities claiming the exemption described in §80.1403(c) or (d), evidence demonstrating the date that construction commenced (as defined in §80.1403(a)(1)) including all of the following:
(A) Contracts with construction and other companies.
(B) Applicable air permits issued by the U.S. Environmental Protection Agency, state, local air pollution control agencies, or foreign governmental agencies that governed the construction and/or operation of the renewable fuel facility during construction and when first operated."
 - a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?
9. §80.1450(b)(1)(vii)(A): "For a producer of renewable fuel or a foreign producer of ethanol made from separated yard waste per §80.1426(f)(5)(i)(A):
(1) The location of any municipal waste facility or other facility from which the waste stream consisting solely of separated yard waste is collected; and
(2) A plan documenting how the waste will be collected and how the renewable fuel producer or foreign ethanol producer will conduct ongoing verification that such waste consists only of yard waste (and incidental other components such as paper and plastics) that is kept separate since generation from other waste materials."
 - a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?
10. §80.1450(b)(1)(vii)(B): "For a producer of renewable fuel or a foreign producer of ethanol made from separated food waste per §80.1426(f)(5)(i)(B):
(1) The location of any municipal waste facility or other facility from which the waste stream consisting solely of separated food waste is collected; and
(2) A plan documenting how the waste will be collected, how the cellulosic and non-cellulosic portions of the waste will be quantified, and for ongoing verification that such waste consists only of food waste (and incidental other components such as paper and plastics) that is kept separate since generation from other waste materials."

Note: The name, address, and specific type of food waste provided must be listed for each supplier in the separated food waste plan. The supplier must also be identified as a point source of separated food waste (e.g., restaurant) or an aggregator of separated food waste. Brokers are not permitted as suppliers.

Regions of collection must also be listed for all aggregators. The regions should not be larger than a metropolitan area, though multiple metropolitan areas may be listed for each aggregator. If the region of collection lies outside of a metropolitan area, the region may be described as a "rural area located in <list of counties in the area of collection>." If a Renewable Fuel Producer collects food waste from point sources themselves, the producer may opt to simply list the specific food wastes they collect along with the region of collection rather than list numerous point sources.

- a. Does the PE agree with the information provided by the fuel producer?
- b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
- c. Are there exceptions between the PE's findings and the information provided by the fuel producer?

11. §80.1450(b)(1)(viii): “For a producer of renewable fuel, or a foreign producer of ethanol, made from separated municipal solid waste per §80.1426(f)(5)(i)(C)” **[See regulations for the remainder of 80.1450(b)(1)(viii)]**
 - a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE’s findings and the information provided by the fuel producer?

12. §80.1450(b)(1)(ix): “(ix)(A) For a producer of ethanol from grain sorghum or a foreign ethanol producer making product from grain sorghum and seeking to have it sold as renewable fuel after addition of denaturant, provide a plan that has been submitted and accepted by U.S. EPA that includes the following information” **[See regulations for the remainder of 80.1450(b)(1)(ix)]**
 - a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE’s findings and the information provided by the fuel producer?

13. §80.1450(b)(1)(x): “For a producer of renewable fuel made from *Arundo donax* or *Pennisetum purpureum* per §80.1426(f)(14)(i)” **[See regulations for the remainder of 80.1450(b)(1)(x)]**
 - a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE’s findings and the information provided by the fuel producer?

14. §80.1450(b)(1)(xi): “For a producer of fuel oil meeting paragraph (2) of the definition of heating oil in §80.1401” **[See regulations for the remainder of 80.1450(b)(1)(xi)]**
 - a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE’s findings and the information provided by the fuel producer?

15. §80.1450(b)(1)(xii): “For a producer or importer of any renewable fuel other than ethanol, biodiesel, renewable gasoline, renewable diesel that meets the ASTM 975-13a Grade No. 1-D or No. 2-D specifications (incorporated by reference, see §80.1468), biogas or renewable electricity all the following” **[See regulations for the remainder of 80.1450(b)(1)(xii)]**
 - a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE’s findings and the information provided by the fuel producer?

16. §80.1450(b)(1)(xiii)(A): “A producer of renewable fuel seeking to generate D code 3 or D code 7 RINs, or a foreign ethanol producer seeking to have its product sold as cellulosic biofuel after it is denatured, who intends to produce a single type of fuel using two or more feedstocks converted simultaneously, where at least one of the feedstocks does not have a minimum 75% average adjusted cellulosic content, and who uses only a thermochemical process to convert feedstock into renewable fuel, must provide all the following” **[See regulations for the remainder of 80.1450(b)(1)(xiii)]**
 - a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE’s findings and the information provided by the fuel producer?

17. §80.1450(b)(1)(xiii)(B): “A producer of renewable fuel seeking to generate D code 3 or D code 7 RINs, or a foreign ethanol producer seeking to have its product sold as cellulosic biofuel after it is denatured, who intends to produce a single type of fuel using two or more feedstocks converted simultaneously, where at

least one of the feedstocks does not have a minimum 75% adjusted cellulosic content, and who uses a process other than a thermochemical process or a combination of processes to convert feedstock into renewable fuel, must provide all the following" **[See regulations for the remainder of 80.1450(b)(1)(xiii)]**

- a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?
18. §80.1450(b)(1)(xiv): "For a producer of cellulosic biofuel made from energy cane, or a foreign renewable fuel producer making ethanol from energy cane and seeking to have it sold after denaturing as cellulosic biofuel, provide all of the following" **[See regulations for the remainder of 80.1450(b)(1)(xiv)]**
- a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?
19. §80.1450(b)(1)(xv): "For a producer of cellulosic biofuel made from crop residue or a foreign renewable fuel producer making ethanol from crop residue and seeking to have it sold after denaturing as cellulosic biofuel, provide all the following information" **[See regulations for the remainder of 80.1450(b)(1)(xv)]**
- a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?
20. §80.1450(d)(3)(iii): For three-year engineering review updates, "In addition to conducting the engineering review and written report and verification required by paragraph (b)(2) of this section, the updated independent third-party engineering review shall include a detailed review of the renewable fuel producer's calculations used to determine V_{RIN} of a representative sample of batches of each type of renewable fuel produced since the last registration. The representative sample shall be selected in accordance with the sample size guidelines set forth at §80.127."
- Note:** The PE must describe how the producer records the fuel volumes and how they calibrate the instruments used to measure volume. The PE must detail the sample size of batches and how he or she selected those samples. For ethanol, the PE must also describe how the producer measures denaturant and calibrates the related instruments. The PE must detail the percentage of denaturant in each batch sample.
- a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?
 - d. How does the producer measure fuel volume and how do they calibrate the related instruments?
 - e. What is the sample size and how did the PE select those samples?
 - f. Did the producer properly apply the temperature correction to 60°F?
 - g. Please attach a spreadsheet detailing the calculations performed, sample size, denaturant percentage (if applicable), and equivalence values (EV) used in the V_{RIN} calculations.
21. §80.1416: If a renewable fuel production facility is registering with a fuel pathway granted via a pathway petition, the PE may be required to review additional registration material per the appropriate Fuel Pathway Determination letter linked to at the following webpage: <http://www.epa.gov/otaq/fuels/renewablefuels/new-pathways/approved-pathways.htm>
- a. Does the PE agree with the information provided by the fuel producer?
 - b. How did the PE evaluate the accuracy of this information? What documents were reviewed?
 - c. Are there exceptions between the PE's findings and the information provided by the fuel producer?

Appendix:

For example:

- A. Copy of CDX OTAQReg-generated Company Update Request CR-[#####]
- B. Professional engineer's license, resume, and experience
- C. Description of fuel types, feedstocks, and production processes provided by the producer
- D. Process heat fuel supply plan
- E. Separated food waste plan
- F. Air permit dated [MM/DD/YYYY] from [Agency Regulating Emissions] supporting Permitted Capacity
 - i. Calculation converting capacity in air permit to gallons/year
- G. Three-year engineering review update V_{RIN} calculation review spreadsheet
- H. Pictures from on-site visit