#### 250-RICR-120-05-43

## TITLE 250 - DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

#### **CHAPTER 120 – AIR RESOURCES**

#### SUBCHAPTER 05 – AIR POLLUTION CONTROL

PART 43 – General Permits for Smaller-Scale Electric Generation Facilities

## 43.1 Purpose and Authority

#### **43.1.1 Purpose**

The purpose of this regulation is to allow certain emergency generators and distributed generators the option to apply for a general permit instead of a minor source permit under Part 9 of this Subchapter (Air Pollution Control Permits).

## 43.1.2 Authority

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and R.I. Gen. Laws Chapter 23-23, and have been promulgated pursuant to the procedures set forth in the Rhode Island Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

# 43.2 Application

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state law, goals and policies.

# 43.3 Severability

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

# 43.4 Incorporated Materials

- A. These regulations hereby adopt and incorporate 40 C.F.R. §§ 89 and 60 Subparts Da, Db, Dc (2018), by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.
- B. These regulations hereby adopt and incorporate, 17 CCR §§ 94200 through 94214.40 (2018), by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

C. These regulations hereby adopt and incorporate International Service Organization Method 8178 (2017), by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

#### 43.5 Definitions

- A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to <a href="Part 0">Part 0</a> of this Subchapter (General Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:
  - 1. "Combined heat and power" or "CHP" means a generator that sequentially produces both electric power and thermal energy from a single source.
  - 2. "Design system efficiency" means for CHP, the sum of the full load design thermal output and electric output divided by the heat input all in consistent units of measurement.
  - 3. "Distributed generator" means any generator that is not defined herein as an emergency generator.
  - 4. "Dual-fuel distributed generator" means a distributed generator that has the capacity to be fired by either a gaseous fuel (including, but not limited to, landfill methane, digester gas, or similarly produced gases) or a liquid fuel, but not by both fuels simultaneously.
  - 5. "Emergency" means an electric power outage due to a failure of the electrical grid, on-site disaster, local equipment failure, or public service emergencies such as flood, fire, or natural disaster.
  - 6. "Emergency generators" means generators used only during emergencies or for maintenance or testing purposes.
  - 7. "Generator" means any equipment that converts primary fuel (including fossil fuels and renewable fuels) into electricity or electricity and thermal energy. In addition to fuel-burning and power generating equipment this includes heat recovery, emission controls and any associated systems.
  - 8. "Installed" means the date on which a generator is first capable of generating electricity.
  - 9. "ISO" means International Organization for Standardization.
  - 10. "Landfill gas" means gas generated by the decomposition of organic waste deposited in a landfill (including municipal solid waste landfills) or derived from the evolution of organic compounds in the waste.

- 11. "Nonroad engine" means:
  - a. Except as discussed in § 43.5(A)(11)(b) of this Part, a nonroad engine is any internal combustion engine:
    - (1) In or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers); or
    - (2) In or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or
    - (3) That, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.
  - b. An internal combustion engine is not a nonroad engine if:
    - (1) The engine is used to propel a motor vehicle or a vehicle used solely for competition, or is subject to standards promulgated under 42 U.S.C. § 7521 (CAA § 202); or
    - (2) The engine is regulated by a federal New Source Performance Standard promulgated under 42 U.S.C. § 7411 (CAA § 111); or
    - (3)The engine otherwise included in § 43.5(A)(11)(a)((3)) of this Part remains or will remain at a location for more than twelve (12) consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two (2) years) and that operates at that single location approximately three (3) months (or more) each year. This paragraph does not apply to an engine after the engine is removed from the location.

- 12. "Other gaseous fuels" means gaseous fuels other than natural gas, including but not limited to propane, landfill gas, waste gas, and anaerobic digester gas.
- 13. "Owner" means the owner of, or person responsible for, a generator subject to the requirements of this rule.
- 14. "Power to heat ratio" means for a CHP unit, the design electrical output divided by the design recovered thermal output in consistent units of measurement.
- 15. "Supplier" means a person or firm that manufactures, assembles, packages or otherwise supplies generators subject to the requirements of this rule.
- 16. "Waste gas" means manufacturing or mining byproduct gases that are not used and are otherwise flared or incinerated. A manufacturing or mining byproduct is a material that is not one of the primary products of a particular manufacturing or mining operation, is a secondary and incidental product of the particular operation, and would not be solely and separately manufactured or mined by the particular manufacturing or mining operation. The term does not include an intermediate manufacturing or mining product which results from one of the steps in a manufacturing or mining process and is typically processed through the next step of the process within a short time.

# 43.6 Applicability and Exemptions

## 43.6.1 Applicability

- A. This rule applies to any generator that:
  - 1. Has a heat input capacity of 350,000 Btus or more per hour or, in the case of internal combustion engines, is fifty (50) HP or larger; and,
  - 2. Is not subject to or would not cause a facility to be subject to the major source permitting requirements of either §§ 9.8 or 9.9 of this Subchapter (Air Pollution Control Permits).

#### 43.6.2 Exemptions

Generators whose engines are nonroad engines will be exempt from compliance with the requirements of this rule.

# 43.7 Option to Apply for a General Permit

A. A generator that is required to obtain a minor source permit under § 9.7.1 of this Subchapter (Air Pollution Control Permits) may apply for a general permit

provided that the generator meets the requirements of this regulation. A general permit is a pre-approved minor source permit. By issuing a general permit, the Department indicates that it approves the installation of the emissions unit(s) authorized by the general permit. A general permit issued pursuant to the requirements of this section satisfies the requirements for a minor source permit.

- B. A generator that is required to obtain a minor source permit under § 9.7.1 of this Subchapter (Air Pollution Control Permits) that does not meet the requirements of this regulation, must obtain a minor source permit pursuant to the requirements of Part 9 of this Subchapter.
- C. The owner is fully responsible for ensuring that the permit conditions and emission limitations of the general permit and this regulation are complied with. If an applicant has applied for a general permit and the application is incorrect or deficient, the applicant may be liable for penalties for installing the emissions unit(s) without a permit. Examples of ways an application might be incorrect or deficient include: if the emission unit(s) does not qualify for the general permit or if the application was improperly completed.
- D. A general permit will be issued if the following conditions are met:
  - 1. The owner/operator has submitted a complete application that provides all of the information requested on the form; and,
  - 2. The owner/operator has provided the Department sufficient information to demonstrate that the generator meets the requirements of this regulation.
- E. Application for a general permit shall be made by the owner of the generator on forms furnished by the Director and shall be signed by:
  - 1. For a corporation: a president, secretary, treasurer or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for the permit;
  - 2. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
  - 3. For a municipality, State, Federal or other public agency: either a principal executive officer or ranking elected official. For the purposes of this Part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
- F. A separate application is required for each generator.

G. A source shall obtain a minor source permit under § 9.7.1 of the Subchapter (Air Pollution Control Permits) if the state has reasonable cause to believe that emissions from the proposed, modified or relocated generator will violate the control strategy or interfere with the attainment or maintenance of a national ambient air quality standard.

#### 43.8 Emission Standards

A generator's emissions of nitrogen oxides (NOx), particulate matter (PM), carbon monoxide (CO), and carbon dioxide (CO2) under full load design conditions or at the load conditions specified by the applicable testing methods shall not exceed the standards set out in §§ 43.8.1 and 43.8.2 of this Part. A generator shall meet the applicable emission standards in effect on the date that the unit is installed.

## **43.8.1 Emergency Generators**

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- A. Emergency generators may be operated up to a maximum of five hundred (500) hours per year for maintenance, testing, and emergencies.
- B. Emergency generators shall not be operated in conjunction with any voluntary demand-reduction program or any other interruptible power supply arrangement with a utility, other market participant or system operator.
- C. Emergency generators must meet the emissions standards set by the US EPA for nonroad engines in 40 C.F.R. § 89, incorporated in § 43.4(A) of this Part, as follows:
  - 1. Installed on or after May 15, 2007:

a.	Rated power 37 ≤ kW < 75:	Tier 2	
b.	Rated power 75 ≤ kW < 130:	Tier 2	
C.	Rated power 130 ≤ kW < 225:	Tier 2	
d.	Rated power 225 ≤ kW ≤ 2237:	Tier 2	
e.	Rated power > 2237 kW:	Tier 1	
Installed on or after January 1, 2009:			

Rated power  $37 \le kW < 75$ :

Rated power  $75 \le kW < 130$ :

Rated power  $130 \le kW < 225$ :

Rated power  $225 \le kW \le 560$ :

Tier 3

Tier 3

Tier 3

Tier 3

e. Rated power  $560 < kW \le 2237$ : Tier 2

f. Rated power > 2237 kW: Tier 1

3. Installed on or after January 1, 2012:

a. Rated power  $37 \le kW < 75$ : Tier 3

b. Rated power  $75 \le kW < 130$ : Tier 3

c. Rated power 130 ≤ kW < 225: Tier 3

d. Rated power  $225 \le kW \le 560$ : Tier 3

e. Rated power  $560 < kW \le 2237$ : Tier 2

f. Rated power > 2237 kW: Tier 2

- D. Carbon dioxide emissions from the emergency generator shall not exceed 1900 lbs/MWh.
- E. The sulfur content of any liquid fuel burned in the emergency generator shall not exceed 15 ppm (0.0015%) by weight.
- F. The sulfur content of any gaseous fuel burned in the emergency generator shall not exceed ten (10) grains total sulfur per one hundred (100) dry standard cubic feet.
- G. Visible emissions from the emergency generator shall not exceed ten percent (10%) opacity except for a period or periods aggregating no more than three (3) minutes in any one (1) hour. This visible emission limitation shall not apply during startup of an emergency generator. Startup shall be defined as the first ten (10) minutes of firing following the initiation of firing.

#### 43.8.2 Distributed Generators

A. Nitrogen oxides emission standards for distributed generators are as follows:

1. Installed on or after May 15, 2007: 0.6 lbs/MWh

2. Installed on or after January 1, 2009: 0.3 lbs/MWh

3. Installed on or after January 1, 2012: 0.15 lbs/MWh

B. Carbon monoxide emission standards for distributed generators are as follows:

1. Installed on or after May 15, 2007: 10 lbs/MWh

2. Installed on or after January 1, 2009: 2 lbs/MWh

3. Installed on or after January 1, 2012: 1 lbs/MWh

C. Carbon dioxide emissions standards for distributed generators are as follows:

1. Installed on or after May 15, 2007: 1,900 lbs/MWh

2. Installed on or after January 1, 2009: 1,900 lbs/MWh

3. Installed on or after January 1, 2012: 1,650 lbs/MWh

D. Particulate matter emissions standards for distributed generators that are reciprocating engines, when firing a liquid fuel, are as follows:

1. Installed on or after May 15, 2007: 0.7 lbs/MWh

2. Installed on or after January 1, 2009: 0.07 lbs/MWh

3. Installed on or after January 1, 2012: 0.03 lbs/MWh

- E. The sulfur content of any liquid fuel burned in the distributed generator shall not exceed 15 ppm (0.0015%) by weight.
- F. The sulfur content of any gaseous fuel burned in the distributed generator shall not exceed ten (10) grains total sulfur per one hundred (100) dry standard cubic feet.
- G. Visible emissions from the distributed generator shall not exceed ten percent (10%) opacity except for a period or periods aggregating no more than three (3) minutes in any one (1) hour. This visible emission limitation shall not apply during startup of a distributed generator. Startup shall be defined as the first ten (10) minutes of firing following the initiation of firing.

#### 43.8.3 Dual-Fuel Distributed Generators

- A. Dual-fuel distributed generators must meet all applicable emission standards of this section when firing a gaseous fuel.
- B. The emission standards of this section do not apply when a dual fuel distributed generator is firing a liquid fuel. Such generators may operate no more than thirty (30) days per year firing a liquid fuel.
- C. The liquid fuel must meet the sulfur content requirements of § 43.8.2(E) of this Part.

## 43.8.4 Existing Emergency Generators

Owners/operators of emergency generators with a minor source permit issued prior to the effective date of this regulation, shall not operate the emergency generator in conjunction with any voluntary demand-reduction program or any other interruptible power supply arrangement with a utility, other market participant or system operator.

## 43.9 Compliance Demonstration

#### 43.9.1 Emissions Certification

- A. An owner or operator may seek to certify that its generators meet the emission standards of this rule by providing one of the following certifications:
  - Certification by the California Air Resources Board pursuant to 17 CCR §§
    94200 through 94214, incorporated in § 43.4(B) of this Part. The
    certification shall be documented by providing a valid and effective
    Executive Order issued by the executive officer of the California Air
    Resources Board certifying compliance; or
  - 2. Certification by the generator supplier stating the subject make and model of generator meets the required emission standards as supplied. This certification shall include emission test results conducted on the subject make and model of generator, including all appurtenances and equipment representative of the proposed installation, demonstrating that emissions of nitrogen oxides, particulate matter and carbon monoxide from the generator meet the emission standards in units of pounds of emissions per megawatt hour (lb/MWh) at full load design (ISO) conditions or at the load conditions specified by the applicable testing methods as follows. With respect to nitrogen oxides and carbon monoxide, test results from EPA Reference Methods, California Air Resources Board methods, or equivalent testing may be used to verify this certification. Equivalent test methods must be approved by the Office of Air Resources prior to the performance of any emission tests. When testing the output of particulate matter from liquid-fuel reciprocating engines, ISO Method 8178 shall be used, incorporated in § 43.4(C) of this Part.
- B. If the design of a certified generator is modified after installation, the generator must be re-certified or be issued a minor source permit pursuant to the applicable provisions of <a href="Part 9">Part 9</a> of this Subchapter.
- C. Any engine that has been certified to meet the currently applicable US EPA non-road emissions standards set out in § 43.8.1 of this Part shall be deemed to be certified for use as an emergency generator.
- D. An owner or operator shall provide calculations to demonstrate that its emergency generator or distributed generator meets the emissions standards for carbon dioxide of this rule. The calculations shall be specific to the subject make and model of generator and fuel type.

#### 43.9.2 On-site Testing

- A. An owner of a generator that is not certified under the terms of § 43.9.1 of this Part will need to demonstrate compliance with the emission standards through on-site testing.
- B. On-site emissions testing shall be conducted for nitrogen oxides, carbon monoxide, carbon dioxide and particulate matter no later than one hundred eighty (180) days after commencing operation.
- C. An emission testing protocol shall be submitted to the Office of Air Resources for review and approval prior to the performance of any emissions tests.
- D. All test procedures used for emissions testing shall be conducted in accordance with EPA Reference Methods, California Air Resources Board methods or another method approved by the Office of Air Resources prior to the performance of any emissions tests.
- E. The owner/operator shall install any and all test ports or platforms necessary to conduct the required testing, provide safe access to any platforms, and provide the necessary utilities for sampling and testing equipment.
- F. All testing shall be conducted under operating conditions deemed acceptable and representative for the purpose of assessing compliance with the applicable emission standards.
- G. The owner/operator shall notify the Office of Air Resources at least sixty (60) days before the tests are scheduled.
- H. All emissions testing must be observed by the Office of Air Resources or its authorized representatives to be considered acceptable, unless the Office of Air Resources provides authorization to the owner/operator to conduct the emission testing without an observer present.
- I. A final report of the results of any on-site testing shall be submitted to the Office of Air Resources no later than sixty (60) days following completion of testing.

#### 43.10Credit for Concurrent Emissions Reductions

#### 43.10.1 Flared Fuels

A. If a distributed generator uses fuel that would otherwise be flared, the emissions that were or would have been produced through the flaring can be deducted from the actual emissions of the distributed generator for the purposes of calculating compliance with the emission standards in this rule. If the actual emissions from flaring can be documented, they may be used as the basis for calculating the credit, subject to the approval of the Office of Air Resources. If the actual emissions from flaring cannot be documented, then the following default values shall be used:

Emissions	Waste, Landfill, Digester Gases
nitrogen oxides	0.1 lbs/MMBtu
carbon monoxide	0.7 lb/MMBtu
carbon dioxide	117 lb/MMBtu

#### 43.10.2 Combined Heat and Power

- A. CHP installations must meet the following requirements to be eligible for emissions credits related to thermal output:
  - a. The power-to-heat ratio must be between 4.0 and 0.15.
  - b. The design system efficiency must be at least 55 percent (55%).
- B. A CHP system that meets these requirements can receive a compliance credit against its actual emissions based on the emissions that would have been created by a conventional separate system used to generate the same thermal output. The credit will be subtracted from the actual generator emissions for purposes of calculating compliance with the emission standards in § 43.8.2 of this Part. The credit will be calculated according to the following assumptions and procedures:
  - 1. The emission rates for the displaced thermal system (e.g. boiler) will be:
    - a. For CHP installed in new facilities, the emissions limits applicable to new natural gas-fired boilers in 40 C.F.R. § 60 Subparts Da, Db, Dc, incorporated in § 43.4(A) of this Part, as applicable, in lb/MMBtu.
    - b. For CHP facilities that replace existing thermal systems for which historic emission rates can be documented, the historic emission rates in lbs/MMBtu but not more than:

Emissions	Maximum Rate
nitrogen oxides	0.3 lbs/MMBtu
carbon monoxide	0.08 lb/MMBtu
carbon dioxide	117 lb/MMBtu

- 2. The emissions rate of the thermal system in lbs/MMBtu will be converted to an output-based rate by dividing by the thermal system efficiency. For new systems the efficiency of the avoided thermal system will be assumed to be eighty percent (80%) for boilers or the design efficiency of other process heat systems. If the design efficiency of the other process heat system cannot be documented, an efficiency of eighty percent (80%) will be assumed. For retrofit systems, the historic efficiency of the displaced thermal system can be used if that efficiency can be documented and if the displaced thermal system is either enforceably shut down and replaced by the CHP system, or if its operation is measurably and enforceably reduced by the operation of the CHP system.
- 3. The emissions per MMBtu of thermal energy output will be converted to emissions per MWh of thermal energy by multiplying by 3.412 MMBtu/MWhthermal.
- 4. The emissions credits in lbs/MWh<sub>thermal</sub>, as calculated in § 43.10.2(B)(3) of this Part, will be converted to emissions in lbs/MWh<sub>emissions</sub> by dividing by the CHP system power-to-heat ratio.
- 5. The credit, as calculated above in § 43.10.2(B)(4) of this Part, will be subtracted from the actual emission rate of the CHP unit to produce the emission rate used for compliance purposes.
- 6. The mathematical calculations set out in §§ 43.10.2(B)(1) through (4) of this Part are expressed in the following formula:

Credit lbs/MWhemissions = [(boiler limit lbs/MMBtu)/(boiler efficiency)] x = (3.412/(power to heat ratio))

## 43.10.3 End-Use Efficiency and Non-Emitting Resources

When end-use energy efficiency and conservation measures or electricity generation that does not produce any of the emissions regulated herein are installed and operated contemporaneously at the facility where the generator is installed and operated, then the electricity savings credited to the efficiency and conservation measures or supplied by the non-emitting electricity source shall be added to the electricity supplied by the generator for the purposes of calculating compliance with the emission standards of this rule, subject to the approval of the Office of Air Resources and in accordance with any guidelines established by the Office of Air Resources for determining such savings.

# **43.11Monitoring Requirements**

## 43.11.1 Emergency Generators

Each emergency generator shall be equipped with a non-resettable elapsed time meter to indicate, in cumulative hours, the elapsed operating time for the unit.

#### 43.11.2 Distributed Generators

If the distributed generator is supplied with fuel from more than one (1) tank or if multiple sources are supplied fuel by one (1) fuel tank, each distributed generator shall be equipped with a non-resettable fuel metering device to continuously monitor the fuel consumption by the unit. Generators whose total capacity is two hundred (200) kW or less will be exempt from this requirement.

# 43.12Record Keeping and Reporting

## 43.12.1 Emergency Generators

- A. The owner/operator shall, on a monthly basis, no later than five (5) days after the first of each month, determine and record the hours of operation for the emergency generator for the previous 12-month period.
- B. The owner/operator shall notify the Office of Air Resources, in writing, whenever the hours of operation in any 12-month period exceeds five hundred (500) hours for the emergency generator.
- C. For each shipment of liquid fuel, the owner/operator shall maintain a certification from the fuel supplier that includes the following information:
  - 1. The name of the fuel supplier;
  - 2. The sulfur content of the fuel from which the shipment came or the shipment itself;
  - 3. The location of the fuel when the sample was drawn for analysis to determine the sulfur content of the fuel, specifically including whether the fuel was sampled as delivered to the facility or whether the sample was drawn from fuel in storage at the fuel supplier's facility or another location;
  - 4. The method used to determine the sulfur content of the fuel.

## 43.12.2 Distributed generators

- A. The owner/operator shall, on a monthly basis, no later than five (5) days after the first of each month, determine and record the fuel use for the distributed generator for the previous 12-month period.
- B. For each shipment of liquid fuel, the owner/operator shall maintain a certification from the fuel supplier that includes the following information:
  - 1. The name of the fuel supplier;

- 2. The sulfur content of the fuel from which the shipment came or the shipment itself;
- 3. The location of the fuel when the sample was drawn for analysis to determine the sulfur content of the fuel, specifically including whether the fuel was sampled as delivered to the facility or whether the sample was drawn from fuel in storage at the fuel supplier's facility or another location;
- 4. The method used to determine the sulfur content of the fuel.
- C. Distributed generators with electric generating capacity of less than two hundred (200) kW shall be exempt from these requirements.

#### 43.12.3 Availability of Records

Unless the Office of Air Resources provides otherwise in writing, the owner shall maintain each record required by this subsection for a minimum of five (5) years after the date such record is made. An owner shall promptly provide any such record, or copy thereof, to the Office of Air Resources upon request.

## 43.13Duty to Comply

- A. Issuance of a general permit pursuant to the provisions of this regulation does not relieve the owner/operator from the responsibility to comply fully with any applicable state or federal air pollution control rules or regulations and any other requirements under local, state or federal law.
- B. Any conditions included with a general permit issued pursuant to this regulation shall have the full force and effect of rules and regulations.
- C. Any person who receives a general permit shall comply with all conditions included with the permit.
- D. Failure to comply with any condition included in a general permit issued pursuant to this regulation shall be considered failure to comply with this regulation.

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# TITLE 250 - DEPARTMENT OF ENVIRONMENTAL MANAGEMENT CHAPTER 120 - AIR RESOURCES

#### **SUBCHAPTER 05 - AIR POLLUTION CONTROL**

PART 43 - AIR POLLUTION CONTROL REGULATION NO. 43- GENERAL PERMITS FOR SMALLER-SCALE ELECTRIC GENERATION FACILITIES

Department of State

Regulation Effective Date

Original Signing Date

Department of State Date