

Indeck Maine Energy, L.L.C.)	Department
Penobscot County)	Findings of Fact and Order
West Enfield, Maine)	Part 70 Air Emission License
A-91-70-A-I)	

After review of the Initial Part 70 License application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A, Section 344 and Section 590, the Department finds the following facts:

I. Registration

A. Introduction

FACILITY	Indeck Maine Energy, L.L.C. –West Enfield (IMEWE)
LICENSE NUMBER	A-91-70-A-I
LICENSE TYPE	Initial Part 70 License
SIC CODES	4911
NATURE OF BUSINESS	Electrical power generation
FACILITY LOCATION	Route 2, West Enfield, Maine
DATE OF LICENSE ISSUANCE	September 5, 2001
LICENSE EXPIRATION DATE	September 5, 2006

B. Emission Equipment

The following emission units are addressed by this Part 70 License:

EMISSION UNIT ID	UNIT CAPACITY	UNIT TYPE
Boiler 1	361.5 MMBtu/hr	Wood fired boiler
Diesel Generator	2.54 MMBtu/hr	Emergency Generator
Diesel Fire Pump	1.9 MMBtu/hr	Emergency Fire Pump

IMEWE has additional insignificant activities not listed in the emission equipment table above, but can be found in the application submitted in October of 1997.

C. Application Classification

The application for IMEWE does not include the licensing of increased emissions or the installation of new or modified equipment; therefore the license is considered to be an Initial Part 70 License issued under Chapter 140 of the Department's regulations for a Part 70 source.

II. EMISSION UNIT DESCRIPTION

Process Description

The IMEWE West Enfield plant consists of a fuel handling system, circulating fluidized bed (CFB) wood fired boiler with a multi-cyclone followed by an electrostatic precipitator.

Biomass fuel (bark and wood chips, hereinafter referred to only as wood chips) are received from enclosed trailer vans and off loaded by hydraulic-dumper lifts into a receiving hopper. The wood is belt conveyed through a magnetic separator and a disc screen classifier. Any oversize wood is "hogged" to wood size specifications. The chips are conveyed to the fuel yard where a front-end loader is used to manage the storage pile and to feed the chip reclaimer.

The reclaimed chips are conveyed to a fuel metering bin located at the front of the boiler. Fuel is fed to the boiler by four parallel trains consisting of a triple screw metering feeder, a rotary seal valve and an injector screw feeder. The chips enter a bed of refractory sand which is fluidized by the combustion air. The mixing action of the sand promotes efficient combustion.

Propane is used to heat the primary air, which raises the fluidized bed temperature to that required to ignite the main fuel. Primary and overfire air are supplied by a single forced draft fan and are heated in a tubular heater.

Combustion gasses from the boiler pass through a multi-cyclone followed by an electrostatic precipitator (ESP) and vent through a 136' AGL stack.

Ash from all collection points except the bed drain and the ESP hoppers is re-injected pneumatically into the boiler. Ash from the bed drain is collected by a mechanical (screw) system and stored in a one cubic yard dumpster. Ash from the ESP is stored in a 30 cubic-yard silo which vents to a baghouse. Ash from the silo is wetted before discharge to enclosed transport vehicles. Ash is disposed of in accordance with Department rules.

The chip storage pile does not exceed 40' above ground level (AGL) in height and is not a point of concern for fugitive particulate matter (PM) emissions due to the chip size and the high moisture content of the chips. When necessary, the pile surface is wetted to prevent fugitive PM emissions from exceeding 5% opacity.

A. Boiler 1

Boiler 1 is a Babcock & Wilcox model CFB-0001 circulating fluidized bed boiler, manufactured in 1985 and installed in 1986 with a maximum design heat input capacity of 361.5 MMBtu/hr. The boiler is wood fired and uses propane for startup and flame stabilization. Boiler 1 is subject to the provisions of NSPS requirement 40 CFR Part 60, Subpart Db. Boiler 1 serves a generator with a maximum generating capacity of approximately 27 MW.

The operation and maintenance of a multiple centrifugal cyclone separator followed by an electrostatic precipitator (ESP) are used to control particulate emissions from Boiler 1. IMEWE shall operate, at a minimum, the number of ESP chambers and number of fields per chamber that operated during the most recent demonstration of compliance with the licensed particulate emission limits.

A continuous emissions monitoring system (CEMS) is used at IMEWE to demonstrate compliance with NO_x emission rates. A continuous opacity monitor (COM) is used to demonstrate compliance with opacity requirements. An oxygen (O₂) CEM is used to measure diluent oxygen the flue gas.

Streamlining

1. 40 CFR Part 60.43b(c)(1), (f), (g) and MEDEP Regulations Chapter 103 regulate particulate matter (PM). However, Best Practical Treatment (BPT) in the current license is more stringent.
2. MEDEP Chapter 101 is applicable for visible emissions. However, 40 CFR Part 60.43b(f) and BPT in the current license are more stringent.

Periodic Monitoring

Stack testing for particulate matter emission rates once every two years.

Propane use record keeping.

Electrostatic Precipitator (ESP) primary and secondary voltages and currents shall be recorded as periodic monitoring for particulate matter emissions.

Documentation that the NO_x CEM is continuously accurate, reliable and operated in accordance with Chapter 117, 40 CFR Part 51 Appendix P, and 40 CFR Part 60 Appendices B and F.

Demonstrated NO_x and opacity limits through CEM, periodic monitoring and COM data provides reasonable assurance the CO and VOC emission limits are being met.

B. Miscellaneous Emissions Units

Miscellaneous emission units include the following: A 2.536 MMBtu/hr Emergency Diesel Generator and a 1.902 MMBtu/hr Diesel Fire Pump.

Streamlining

Chapter 101, Section 2(C) is applicable for visible emissions; however, the BPT opacity limit is more stringent.

Periodic Monitoring

Periodic monitoring shall consist of record keeping which includes records of fuel use through purchase receipts indicating amount (gallons) and percent sulfur by weight (documented through supplier fuel receipts) for the diesel units.

Based on the type and amount of fuel for which the diesel units were designed, and operating in a manner consistent with good pollution control practices, it is unlikely the diesel unit will exceed opacity limits. Therefore, periodic monitoring by the source for opacity in the form of visible emission testing in accordance with 40 CFR Part 60, Appendix A, Method 9 is not required. However, neither the EPA nor the state is precluded from performing its own testing and may take enforcement action for any violations discovered.

C. General Process Sources

General processes at IMEWE include the receiving hopper, conveyors, wood chipper and transfer points.

Periodic Monitoring

Based on best management practices, it is unlikely the fugitive emission sources will exceed the opacity limits. Therefore, periodic monitoring for opacity in the form of visible emissions is not required. However, neither the EPA nor the state is precluded from performing its own testing and may take enforcement action for any violations discovered.

D. Fugitive Emissions

Fugitive particulate matter sources at IMEWE include material stockpiles and roadways.

Periodic Monitoring

Based on best management practices and wetting roads and storage piles with water when appropriate, it is unlikely the fugitive emission sources will exceed the opacity limits. Therefore, periodic monitoring for opacity in the form of visible emission is not required. However, neither the EPA nor the state is precluded from performing its own testing and may take enforcement action for any violations discovered.

E. Facility Emissions

The following total licensed annual emissions for the facility are based on the following raw materials used. All usages are based on a 12 month rolling total.

- Boiler #1 wood use of 170,968 tons per year (8,500 Btu/lb, 5.56% moisture, or equivalent) based on firing 8,040 hours per year.
 - Boiler #1 Propane use of 250,000 gallons per year of propane.
 - Emergency Diesel Generator fuel use of 9,188 gallons per year of diesel fuel (0.05% sulfur by weight) based on 500 hours per year of operation.
 - Diesel Fire Pump fuel use of 6,891 gallons per year of diesel fuel (0.05% sulfur by weight) based on 500 hours per year of operation.
- (all based on a 12 month rolling total)

Total Allowable Annual Emissions for the Facility
(used to calculate the license fee)

Pollutant	Tons/Year
PM	45.1
PM ₁₀	45.1
SO ₂	44.4
NO _x	249.9
CO	249.9
VOC	145.8

III. AIR QUALITY ANALYSIS

A. Overview

A combination of screening and refined modeling was performed to show that emissions from Indeck's facility, in conjunction with other sources, would not cause or contribute to violations of Maine Ambient Air Quality Standards (MAAQS) for SO₂, PM₁₀, NO₂ and CO or to Class II Increment for NO₂.

It was determined by MEDEP-BAQ that Indeck's facility consumes NO₂ increment, therefore a Class II increment analysis was performed.

It was determined by MEDEP-BAQ that Indeck is a relatively small source located a approximately 100 kilometers from the nearest Class I area and is not likely to affect ambient Class I increment, therefore a Class I analysis was not performed.

B. Model Inputs

The SCREEN3 model was used to determine the worst-case operating load and the SO₂, PM₁₀, NO₂ and CO significant impact areas in simple, intermediate, and complex terrain.

The ISC-PRIME model was used in refined simple terrain mode to address standards in all areas, including the cavity region. In addition, the COMPLEX-I model in the VALLEY Mode (CI-VM) was used to evaluate impacts in intermediate and complex terrain, i.e., areas where terrain elevations exceed the proposed stack-top elevations.

All modeling was performed in accordance with all applicable requirements of the MEDEP-BAQ and the United States Environmental Protection Agency (USEPA).

A valid five (5) year hourly meteorological off-site database was used for the refined modeling. The wind data was collected at a height of 76.20 meters at the Fort James meteorological monitoring site during the five (5) year period 1991-1995. Each year of meteorological data meets the 90% data recovery requirement, both singularly and jointly. Missing data were interpolated or coded as missing. Sigma-phi data (calculated using four 15-minute averages), and wind data measured at the ten (10) meter level, were used to calculate stability. Hourly mixing heights were derived from surface and upper air data collected at Caribou NWS station. A surface roughness length of 65 centimeters was used in the analysis.

Stack parameters used in the modeling for Indeck’s facility and other nearby sources are listed in Table IV-1. The modeling analyses accounted for the potential of building wake effects on emissions from all modeled stacks that are below their respective formula GEP stack heights.

Table IV-1. Stack Parameters

Facility/Stack	Stack Base Elev. (m)	Stack Ht. (m)	GEP Stack Ht. (m)	Stack Dia. (m)	UTM E (km)	UTM N (km)
CURRENT/PROPOSED						
Indeck	68.58	41.50	75.56	2.74	529.060	5010.970
IP Passadumkeag	64.00	15.24	38.10	1.22	531.680	5006.820

Emission parameters for Indeck’s facility and other nearby sources for MAAQS modeling are listed in Table IV-2. Emission parameters for Indeck’s facility are based on the maximum license allowed operating configuration. For the purpose of determining NO₂ and PM₁₀ impacts, all NO_x and PM emissions were conservatively assumed to convert to NO₂ and PM₁₀, respectively.

Table IV-2. Emission Parameters

Facility/Stack	Operating Scenario	SO ₂ (g/s)	PM ₁₀ (g/s)	NO ₂ (g/s)	CO (g/s)	Temp (K)	Stack Vel. (m/s)
CURRENT:							
Indeck	Max	1.389	1.366	13.665	7.834	408.2	11.07
IP Passadumkeag, firing wood	Max	0.17	2.27	1.70	17.03	450	13.98
IP Passadumkeag, firing oil	Max	4.08	2.27	3.40	0.45	450	11.03
BASELINE – 1987:							
Indeck				8.524		408.2	9.42

C. Applicant's modeled impacts.

SCREEN3 modeling analyses were performed for the maximum, typical (75% of maximum operating case emission and stack velocity) and minimum (50% of maximum operating case emission and stack velocity) operating load cases for Indeck’s facility alone. It was demonstrated that the maximum operating load case would result in maximum impacts in simple, intermediate, and complex terrain; thus the typical and minimum load cases were not examined further. The SCREEN3 model results for Indeck’s facility are shown in Table IV-3. Pollutants that exceed their significance levels are indicated in bold type.

Table IV-3. Maximum SCREEN3 Predicted Impacts from Indeck Alone

Pollutant	Averaging Period	Maximum Impact Simple Terrain ($\mu\text{g}/\text{m}^3$)	Maximum Impact Complex Terrain ($\mu\text{g}/\text{m}^3$)	Class II Significance Level ($\mu\text{g}/\text{m}^3$)
SO ₂	3-hour	105.96	4.18	25
	24-hour	18.84	1.86	5
	Annual	9.42	0.37	1
PM ₁₀	24-hour	25.68	2.53	5
	Annual	12.84	0.51	1
NO ₂	Annual	128.45	5.07	1
CO	1-hour	920.5	36.33	2000
	8-hour	644.35	25.43	500

D. Combined Source Modeling.

Because modeled impacts from Indeck’s facility were greater than significance levels for all SO₂, PM₁₀, and NO₂ averaging periods and CO 8-hour averaging period in simple terrain and the NO₂ annual averaging period in complex terrain, other sources not explicitly included in the modeling analysis must be included by using representative background concentrations for the area. Background concentrations used were based on conservative eastern Maine rural background monitoring data from data collected for SO₂ from Dedham, Bald Mountain site, for PM₁₀ from the Baileyville site, from data collected for NO₂ from the Portland area (PEOPL Site), and for CO from the Dedham, Bald Mountain site. These background values are listed in Table IV-4.

TABLE IV-4. Background Concentrations ($\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Period	Background
SO ₂	3-hour	52
	24-hour	29
	Annual	5
PM ₁₀	24-hour	42
	Annual	10
NO ₂	Annual	11
CO	8-hour	2284

MEDEP-BAQ examined other sources whose impacts would potentially be significant in or near Indeck’s facility’s significant impact area. Due to the applicant’s location, extent of the significant impact area and nearby source emissions, MEDEP-BAQ has determined that only International Paper’s Mill (formerly Diamond Occidental) in Passadumkeag would be considered for combined source modeling.

Table IV-5 summarizes maximum ISC-PRIME combined source impacts. Table IV-6 summarizes maximum CI-VM combined source impacts. Two scenarios were modeled, the first with IP Passadumkeag firing wood, and the second with IP Passadumkeag firing oil. The latter operating scenario demonstrated the greatest impacts for all averaging periods except where noted in Table IV-5. The predicted impacts were added to conservative background concentrations to demonstrate compliance with MAAQS. The combined source model results for simple and complex terrain are shown in Tables IV-5 & IV-6, respectively. All combined SO₂, PM₁₀, NO₂ and CO averaging period impacts from Indeck’s facility including background were below their respective MAAQS.

Table IV-5. Maximum Combined Source Impacts in Simple terrain

Pollutant	Averaging Period	ISC-PRIME Max (µg/m ³)	Receptor UTM-E (km)	Receptor UTM-N (km)	Receptor Elevation (m)	Back-ground (µg/m ³)	Max Total Impact (µg/m ³)	MAAQS (µg/m ³)
SO ₂	3-hour	199.98	531.75	5007.25	70.10	52	251.98	1150
	24-hour	80.80	531.75	5006.75	67.10	29	109.80	230
	Annual	9.39	531.75	5007.25	70.10	5	14.39	57
PM ₁₀	24-hour	44.98	531.75	5006.75	67.10	42	86.89	150
	Annual	5.23	531.75	5007.25	70.10	10	15.23	40
NO ₂	Annual	8.04	531.75	5007.25	70.10	11	19.04	100
CO	8-hour	522.00*	531.75	5007.25	70.10	2284	2806.00	10,000

Key: *Maximum Predicted impacts with IP Passadumkeag firing wood

Table IV-6. Maximum Combined Source Impacts in Complex terrain

Pollutant	Averaging Period	CI-VM Max (µg/m ³)	Receptor UTM-E (km)	Receptor UTM-N (km)	Receptor Elevation (m)	Back-ground (µg/m ³)	Max Total Impact (µg/m ³)	MAAQS (µg/m ³)
NO ₂	Annual	3.06	534.22	5014.76	167.00	11	14.06	100

E. Increment

Area Source Growth

Population growth in Penobscot County can be used as a surrogate factor for the growth in the emissions from residential combustion sources. Information from the U.S. Census Bureau estimates that the population in Penobscot County was 146,601 in 1990 and 144,432 in 1999 for a net decrease of 1.5% between 1990 and 1999. Because of the negative growth in area source emissions a detailed analysis of area source emissions of NO_x was not required.

Mobile Source Growth

Growth in vehicle miles traveled (VMT) can be used to determine the growth in NO_x emissions in the impact area of the proposed source. MEDEP-BAQ performed motor vehicle emission model runs for the period of 1987 to 1998. A VMT growth for this same period of 23% for Penobscot County combined with known controls in mobile source NO_x emissions causes insignificant growth of NO_x in this time period. Hence, further detailed analyses of mobile NO_x emissions are not needed.

As a result, MEDEP-BAQ determined that no NO₂ increment has been consumed by mobile and area sources in Penobscot County. Thus, only point sources need to be considered in the increment analysis.

ISC-PRIME refined model in simple terrain and the CI-VM screening model in complex terrain were used to demonstrate that NO₂ increment would not be violated by the applicant alone. Table IV-7 summarizes increment consumption in simple and complex terrain for Indeck alone.

Table IV-7. Increment Consumption for Indeck Alone

Pollutant	Averaging Period	Model	Increment (µg/m³)	Receptor UTM-E (km)	Receptor UTM-N (km)	Receptor Elevation (m)	Class II Increment (µg/m³)
NO ₂	Annual	ISC-PRIME	0.31	530.75	5014.75	85	25
NO ₂	Annual	CI-VM	1.09	534.22	5014.76	167	25

IP Passadumkeag does not consume increment. Due to the applicant's location, extent of the significant impact area and nearby source's emissions, it has been determined that no other sources would be considered for combined source increment modeling.

F. Summary

In summary, it has been demonstrated that Indeck's facility in its proposed configuration will not cause or contribute to a violation of any SO₂, PM₁₀, NO₂ or CO averaging period MAAQS or Class II Increment.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that emissions from this sources:

- will receive Best Practical Treatment;
- will not violate applicable emissions standards
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants the Part 70 License A-91-70-A-I pursuant to MEDEP Chapter 140 and the preconstruction permitting requirements of MEDEP Chapter 115 and subject to the standards and special conditions below.

All federally enforceable and State-only enforceable conditions in existing air licenses previously issued to IMEWE pursuant to the Department's preconstruction permitting requirements in Chapters 108 or 115 have been incorporated into this Part 70 license, except for such conditions that MEDEP has determined are obsolete, extraneous or otherwise environmentally insignificant, as explained in the findings of fact accompanying this permit. As such the conditions in this license supercede all previously issued air license conditions.

Federally enforceable conditions in this Part 70 license must be changed pursuant to the applicable requirements in Chapter 115 for making such changes and pursuant to the applicable requirements in Chapter 140.

For each standard and special condition which is state enforceable only, state-only enforceability is designated with the following statement: **Enforceable by State-only.**

STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emission units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions and this license;

(Title 38 MRSA §347-C)

- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 140;
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both;
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request; **Enforceable by State-only**
- (5) The licensee shall pay the annual air emissions license fee to the Department, calculated pursuant to Title 38 MRSA §353;
- (6) The Part 70 license does not convey any property rights of any sort, or any exclusive privilege;
- (7) The licensee shall maintain and operate all emission units and air pollution control systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions;
(40 CFR §60.11(d))
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request or in accordance with other provisions of this license;
- (9) The licensee shall comply with all terms and conditions of the air emission license. The submission of notice of intent to reopen for cause by the Department, the filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for the renewal of a Part 70 license or amendment shall not stay any condition of the Part 70 license.
- (10) All terms and conditions are enforceable by EPA and citizens under the CAA unless specifically designated as state enforceable.

- (11) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license;
- (12) In accordance with the Department’s air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
- (a) perform stack testing under circumstances representative of the facility’s normal process and operating conditions:
 - (i) within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring, or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions;
 - (ii) to demonstrate compliance with the applicable emission standards; or
 - (iii) pursuant to any other requirement of this license to perform stack testing.
 - (b) install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emissions testing; and
 - (c) submit a written report to the Department within thirty (30) days from the date of test completion.

Enforceable by State-only

- (13) If the results of a stack test performed under circumstances representative of the facility’s normal process and operating conditions indicates emissions in excess of the applicable standards, then:
- (a) within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility’s normal process and operating conditions and in accordance with the Department’s air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and

- (b) the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
- (c) the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

Enforceable by State-only

- (14) Notwithstanding any other provision in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement.
(40 CFR §60.11(g))
- (15) Compliance with the conditions of this Part 70 license shall be deemed compliance with any Applicable requirement as of the date of license issuance and is deemed a permit shield, provided that:
 - (a) Such Applicable and state requirements are included and are specifically identified in the Part 70 license, except where the Part 70 license term or condition is specifically identified as not having a permit shield; or
 - (b) The Department, in acting on the Part 70 license application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the Part 70 license includes the determination or a concise summary, thereof.

Nothing in this section or any Part 70 license shall alter or effect the provisions of Section 303 of the CAA (emergency orders), including the authority of EPA under Section 303; the liability of an owner or operator of a source for any violation of Applicable requirements prior to or at the time of permit issuance; or the ability of EPA to obtain information from a source pursuant to section 114 of the CAA.

- (16) The licensee shall retain records of all required monitoring data and support information for a period of at least six (6) years from the date of the monitoring sample, measurement, report, or application. Support information includes all

calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the Part 70 license.

- (17) The licensee shall maintain records of all deviations from license requirements. Such deviations shall include, but are not limited to malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emission unit itself that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next working day, whichever is later, of such occasions and shall report the probable cause, corrective action, and any excess emissions in the units of the applicable emission limitation;
- (18) Upon the written request of the Department, the licensee shall establish and maintain such records, make such reports, install, use, and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status.
- (19) The licensee shall submit quarterly reports of any required monitoring as required by the Department. All instances of deviations from Part 70 license requirements must be clearly identified in such reports. All required reports must be certified by a responsible official.
- (20) The licensee shall submit a compliance certification to the Department and EPA at least annually, or more frequent if specified in the Applicable requirement by the Department. The compliance certification shall include the following:
 - (a) The identification of each term or condition of the Part 70 license that is the basis of the certification;
 - (b) The compliance status;
 - (c) Whether compliance was continuous or intermittent;
 - (d) The method(s) used for determining the compliance status of the source, currently and over the reporting period; and
 - (e) Such other facts as the Department may require to determine the compliance status of the source;

(21) The Part 70 license shall be reopened for cause by the Department or EPA, prior to the expiration of the Part 70 license, if:

- (a) Additional Applicable requirements under the CAA become applicable to the Part 70 major source with a remaining Part 70 license term of 3 or more years. However, no opening is required if the effective date of the requirement is later than the date on which the Part 70 license is due to expire, unless the original Part 70 license or any of its terms and conditions has been extended pursuant to Chapter 140;
- (b) Additional requirements (including excess emissions requirements) become applicable to the Title IV source under the acid rain program. Upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the Part 70 license;
- (c) The Department or EPA determines that the Part 70 license contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms of conditions of the Part 70 license; or
- (d) The Department or EPA determines that the Part 70 license must be revised or revoked to assure compliance with the Applicable requirements.

The licensee shall furnish to the Department within a reasonable time any information that the Department may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the Part 70 license or to determine compliance with the Part 70 license.

(22) No license revision or amendment shall be required, under any approved economic incentives, marketable licenses, emissions trading, or other similar programs or processes for changes that are provided for in the Part 70 license.

SPECIAL CONDITIONS

(23) Permit Shield for Non-Applicable Requirements

The following requirements have been specifically identified as not applicable based upon information submitted by the licensee in an application dated July 8, 1996.

	SOURCE	CITATION	DESCRIPTION	BASIS FOR DETERMINATION
a.	Boiler #1	40 CFR Parts 72 and 74	Acid Rain Provisions	IMEWE is exempt from the Acid Rain program.
b.	Boiler #1	40 CFR Part 60.45(j)	Compliance and performance test methods and procedures for sulfur dioxide.	IMEWE fires only propane as its secondary fuel.
c.	Boiler #1	40 CFR Part 60.44b	There is no NSPS NO _x limit if the affected facility has an annual capacity factor less than 10% for oil firing in combination with firing wood.	Boiler 1 has an annual capacity factor less than 10% for waste oil firing.
d.	Boiler #1	40 CFR Part 60.42b	Standard for sulfur dioxide.	Boiler #1 does not fire coal or oil.
e.	Boiler #1	Chapter 117	Source Surveillance RATA Requirements	The timeframe for a RATA to be perform has been altered due to these units being peaking units.
f.	Emergency Diesel Generator	Chapter 103, Section 2(B)(4)(c)	Particulate emission limit for fuel burning equipment < 3.0 MMBtu/hr.	Not applicable, unit is < 3.0 MMBtu/hr.
g.	Diesel Fire Pump	Chapter 103, Section 2(B)(4)(c)	Particulate emission limit for fuel burning equipment < 3.0 MMBtu/hr.	Not applicable, unit is < 3.0 MMBtu/hr.

(24) Boiler 1

A. Boiler 1 steam production shall be limited to 240,000 #/hr, at 1450 psig, averaged over a 2 hour period. IMEWE shall monitor and record steam flow continuously for Boiler #1. Note, “continuously” is defined as: Equally spaced data points with at least one data point for each successive 15 minute period. A minimum of three evenly spaced data points constitutes a valid hour.

The Steam Flow monitor must record accurate and reliable data. If the parameter monitor is recording accurate and reliable data less than 98% of the source-operating time within any quarter of the calendar year, the Department may initiate enforcement action and may include in that enforcement action any period of time that the parameter monitor was not recording accurate and reliable data during that quarter unless the licensee can demonstrate to the satisfaction of the Department that the failure of the system to record accurate and reliable data was due to the performance of established quality assurance and quality control procedures or unavoidable malfunctions.

[MEDEP Chapter 140, BPT]

- B. The maximum heat input capacity from propane in Boiler #1 when firing propane for boiler start-up and flame stabilization shall not exceed 30.0MMBtu/hr (320 gal/hr). The flow rate shall be recorded hourly either by transmitter or manually. The maximum 12-month rolling total of propane fired in Boiler #1 shall not exceed 250,000 gallons.

[MEDEP Chapter 140, BPT]

- C. Emissions from Boiler 1 shall not exceed the following limits when firing wood and/or propane:

Pollutant	lb/MMBtu	Origin and Authority
PM	0.03	MEDEP Chapter 140, BPT
PM ₁₀	0.03	MEDEP Chapter 140, BPT
NO _x	0.30	MEDEP Chapter 140, BPT NO _x RACT

NO_x: The 0.30 lb/MMBtu limit is based on a 24-hour daily block average, via CEM. A 24-hour block average shall be defined as midnight to midnight. In accordance with Chapter 138 § 3(O), periods of startup, shutdown, equipment malfunction and fuel switching shall not be included in determining 24-hour daily block arithmetic average emission rates. IMEWE shall maintain the NO_x CEM in accordance with Chapter 117. The CEM shall meet the monitoring requirements Condition (33). Boiler #1 shall be equipped with an oxygen (O₂) CEM that meets the criteria Condition (33).

[MEDEP Chapter 138, NO_x RACT]

D. Lb/hr emissions from Boiler 1 shall not exceed the following limits:

Pollutant	lb/hour
PM	10.8
PM ₁₀	10.8
SO ₂	11.0
NO _x	108.45
CO	62.2
VOC	36.2

PM, PM₁₀, SO₂, NO_x, CO and VOC: Lb/hr limits are on a one (1) hour average and shall be demonstrated upon request by a stack test in accordance with this license and the following stack test methods:

- PM and PM₁₀ - 40 C.F.R. Part 60, App. A, Method 5
- SO₂ - 40 C.F.R. Part 60, App. A, Method 6
- NO_x - 40 C.F.R. Part 60, App. A, Method 7
- CO - 40 C.F.R. Part 60, App. A, Method 10
- VOC - 40 C.F.R. Part 60, App. A, Method 25

[MEDEP Chapter 140, BPT]

E. Emissions from Boiler 1 shall vent to Stack 1 which shall be at least 136 feet AGL and represent at least 51.7% of the formula GEP stack height.
[MEDEP Chapter 140, BPT]

F. Particulate matter (PM, PM₁₀) emissions from Boiler 1 shall be controlled by the operation and maintenance of a multiple centrifugal cyclone separator followed by an electrostatic precipitator (ESP).

IMEWE shall operate, at a minimum, the number of ESP chambers and number of fields per chamber that operated during the most recent demonstration of compliance with the licensed particulate emission limits. Data for the following points in the ESP shall be recorded once per day during operation:

- 1) Primary and secondary voltages on each field
- 2) Primary and secondary current on each field

[MEDEP Chapter 140, BPT]

Upon written notification to the Department, and in accordance with the Bureau of Air Quality's Air Emission Compliance Test Protocol, IMEWE may perform additional particulate emission testing to demonstrate compliance with alternative operating scenarios, but under no circumstances shall IMEWE be relieved of its obligation to meet its licensed emission limits.

[MEDEP Chapter 140, BPT]

G. NO_x Emissions.

IMEWE shall emit no more than 249.9 tons of NO_x per 12 month rolling total. IMEWE shall determine the annual NO_x emissions from Boiler 1 as follows:

$$\text{NO}_x \text{ lb/MMBtu} = (\text{NO}_x \text{ ppm}) \times (20.9) / (20.9 - \% \text{ O}_2) \times (1.194 \times 10^{-7}) \times (9240)$$

The NO_x ppm and percent O₂ are from the CEM. The (1.194×10⁻⁷) is the conversion factor for ppm NO_x from 40 CFR Part 60, Method 19. The 9240 is the F factor for wood from 40 CFR Part 60, Method 19.

$$\text{NO}_x \text{ TPY} = (\text{NO}_x \text{ lb/MMBtu}) \times (\text{Boiler Heat Rate/megawatt}) \times \text{megawatts generated} / 2000$$

NO_x lb/MMBtu is from the CEM.

Boiler Heat Rate is from Babcock & Wilcox as accepted by Plant Owners. Megawatts generated will be from Bangor Hydro Electric's metering.

H. IMEWE shall operate Boiler 1 such that the opacity does not exceed 20% over a six minute average except for one six minute period per hour of not more than 27%, subject to the exemptions listed in MEDEP Chapter 101, Section 3(E) and 40 CFR Part 60.43b(g).

I. Compliance with the opacity limit shall be demonstrated by means of a continuous opacity monitoring system (COM). The COM shall be installed and certified on the breaching of the ESP to the stack. IMEWE shall maintain the COM in accordance with Condition (33).
[MEDEP Chapter 140, BPT]

J. Boiler 1 is subject to 40 CFR Part 60 Subparts A and Db and IMEWE shall comply with the notification and record keeping requirements of 40 CFR Part 60.7.

40 CFR Part 60 Subpart Db requires maintaining records of the amount of each fuel combusted each day and calculation of annual capacity factor individually for wood and propane for each semiannual period. IMEWE shall maintain monthly fuel use records and determine an annual capacity factor on a 12 month rolling average basis with a new annual capacity calculated at the end of each calendar month.

[MEDEP Chapter 140, BPT]

Propane use shall be recorded hourly to demonstrate compliance.

[MEDEP Chapter 140, BPT]

K. Waste Oil.

IMEWE may use up to 500 gallons per year of waste oil in Boiler 1. Only waste oil generated on-site that meets the Department's criteria for specification or off-specification waste oil may be burned. IMEWE shall maintain records of the amount of waste oil burned in Boiler 1 on a 12 month rolling basis.

[MEDEP Chapter 140, BPT]

- L. Should wind action or handling of wood chips result in visible emissions in excess of 5% opacity, the chips shall be controlled to eliminate visible emissions in excess of 5% opacity on a six (6) minute average.

[MEDEP Chapter 140, BPT] **Enforceable by State Only**

(25) Preventative Maintenance Log

A log for Boiler 1 shall be maintained showing preventative maintenance actions being performed.

[MEDEP Chapter 140, BPT] **Enforceable by State Only**

(26) General Process Sources

Visible emissions from any general process source (including chippers) shall not exceed an opacity of 20% on a 6 minute block average basis, except for no more than 1 six minute block average in a 1 hour period.

[MEDEP Chapter 140, BPT]

(27) Fugitive Emissions

Potential sources of fugitive PM emissions, including material stockpiles, roadways and ash, shall be controlled by wetting with water, with calcium chloride, or other methods as approved by the Bureau of Air Quality, to prevent visible emissions in excess of 10% on a 6 minute block average basis, except for no more than one (1) six (6) minute block average in a 1 hour period.

[MEDEP Chapter 140, BPT]

(28) Miscellaneous Emission Units

Emission Unit	Origin and Authority	Requirement Summary
Emergency Diesel Generator	Chapter 101, Section 2(A), Chapter 140, BPT	Visible emissions shall not exceed an opacity of 30 percent on a six (6) minute block average basis, except for no more than two (2) six (6) minute block averages in a 3-hour period
Diesel Fire Pump	Chapter 101, Section 2(A), Chapter 140, BPT	Visible emissions shall not exceed an opacity of 30 percent on a six (6) minute block average basis, for no more than two (2) six (6) minute block averages in a 3-hour period

(29) Emergency Diesel Generator

Emergency Diesel Generator shall be limited to 500 hours per year of operation (9,188 gallons of fuel), firing 0.05% sulfur (documented through supplier fuel records) diesel fuel, based on a 12 month rolling total. Hours of operation and fuel use records for the emergency diesel generator shall be kept through purchase receipts indicating gallons and percent sulfur by weight.

A log documenting the dates, times and reason of operation for the generator shall be kept.

[MEDEP Chapter 140, BPT]

(30) Diesel Fire Pump

The Emergency Diesel Fire Pump shall be limited to 500 hours per year of operation (6,891 gallons of fuel), firing 0.05% sulfur (documented through supplier fuel records) diesel fuel, based on a 12 month rolling total. Hours of operation and fuel use records for the emergency diesel fire pump shall be kept through purchase receipts indicating gallons and percent sulfur by weight.

A log documenting the dates, times and reason of operation for the fire pump shall be kept.

[MEDEP Chapter 140, BPT]

(31) **Stack Testing** [MEDEP Chapter 140, BPT]

A. All stack testing programs shall comply with all of the requirements of the MEDEP Compliance Test Protocol and with 40 CFR Part 60, as appropriate, or other methods approved by the MEDEP and EPA to test.

- B. IMEWE shall conduct particulate matter testing on Boiler #1 and demonstrate compliance with emission standards within the first 3 years of the date of signature of this license.
- C. IMEWE shall conduct a one-time VOC test during the first particulate matter stack test on Boiler #1. Data from this test will be utilized to determine if a more stringent VOC emission rate is appropriate.

Enforceable by State Only

(32) Units Containing Ozone Depleting Substances

When repairing or disposing of units containing ozone depleting substances, the licensee shall comply with the standards for recycling and emission reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioning units in Subpart B. An example of such units include refrigerators and any size air conditioner that contain CFCs.

[40 CFR, Part 82, Subpart F]

(33) CEMS, COMS, and Parameter Monitors

The CEMS, COMS, and parameter monitors required by this license shall be the primary means of demonstrating compliance with emission standards set by this Order, statute, state or federal regulation, as applicable. IMEWE shall comply with the following: [MEDEP Chapter 140, BPT]

A. Performance Specifications [MEDEP Chapter 117]

All CEMS and COMS shall meet the sampling and performance criteria specified in 40 CFR Part 51 Appendix P, and shall be operated in accordance with 40 CFR Part 60 Appendix B and F and Chapter 117 of the Department's regulations.

1. If the continuous emission monitoring system for the gaseous emissions is recording accurate and reliable data less than 90% of the source-operating time within any quarter of the calendar year, the Department may initiate enforcement action and may include in that enforcement action any period of time that the CEMS was not recording accurate and reliable data during that quarter unless the licensee can demonstrate to the satisfaction of the Department that the failure of the system to record accurate and reliable data was due to the performance of established quality assurance and quality control procedures or unavoidable malfunctions.
2. If the continuous opacity monitoring system is recording accurate and reliable data less than 95% of the source-operating time within any quarter of the calendar year, the Department may initiate enforcement action and may include in that enforcement action any period of time that the continuous emission monitoring system was not recording accurate and reliable data during that quarter unless the licensee can demonstrate to the

satisfaction so the Department that the failure of the system to record accurate and reliable data was due to the performance of established quality assurance and quality control procedures or unavoidable malfunctions.

3. Conduct Relative Accuracy Testing (RATA) and/or Performance Audits in accordance with Chapter 117 of the Department’s regulations unless the unit has not had 168 unit operating hours, as defined in Part 72, in a quarter then that quarter shall be excluded in determining the deadline for the next RATA. If the RATA has not been completed by the end of the eighth calendar quarter since the quarter of the last RATA, then the RATA must be completed within a 720 unit operating hour grace period following the end of the eighth successive elapsed calendar quarter, or the data from the CEMS will become invalid.

IMEWE shall perform a cylinder gas audit (CGA) in accordance with 40 CFR Part 60, Appendix F if Boiler #1 was run during the quarter. CGA's may be conducted at any load. Upon request of IMEWE, DEP may waive the requirement in Chapter 117 that notice be provided 10 days in advance of a CGA and the requirement in Chapter 117 and 40 CFR Part 60, Appendix F that CGA's must be conducted no less than 60 days apart.

4. Develop and maintain an updated quality assurance plan for all CEMS and COMS in accordance with 40 CFR Part 60 Appendix F and Chapter 117 of the Department’s regulations.

B. Recordkeeping [MEDEP Chapter 117 and Chapter 140, BPT]

For all of the continuous emission monitoring (CEMS), continuous opacity monitor (COM), equipment parameter monitoring and recording, required by this license, the licensee shall maintain records of the most current six year period and the records shall include:

1. Documentation which shows monitor operational status during all source operating time, including specifics for calibration and audits; and
2. A complete data set of all monitored parameters as specified in this license. All parameter records shall be made available to the Bureau of Air Quality upon request.
3. For all CEMS and COM, the records shall include:
 - a. Documentation that all CEMS and COM are continuously accurate, reliable, and operated in accordance with Chapter 117, 40 CFR Part 51, Appendix P, and 40 CFR Part 60, Appendices B and F;

- b. Records of all measurements, performance evaluations, calibration checks, and maintenance or adjustments for each CEMS and COMS, as required by 40 CFR Part 51 Appendix P;
- c. Upon the written request by the Department a report or other data indicative of compliance with the applicable emission standard for those periods when the CEMS or COMS were not in operation or produced invalid data. Methods allowed by 40 CFR Part 75 may be used to demonstrate compliance with applicable emission standards. Evidence indicating normal operations shall constitute such reports or other data indicative of compliance with applicable emission standards. In the event the Bureau of Air Quality does not concur with the licensee's compliance determination, the licensee shall, upon the Bureau of Air Quality's request, provide additional data, and shall have the burden of demonstrating that the data are indicative of compliance with the applicable standard; and
- d. A 24-hour block average shall be calculated as the arithmetic average of not more than 24 one-hour block periods. Only one 24-hour block average shall be calculated for one day, beginning at midnight. A valid 24-hour block average must contain at least 12 hours during which operation occurred. Hours in which no operation occurs shall not be included in the 24-hour block average calculation.

C. Quarterly Reporting

The licensee shall submit a Quarterly Report to the Bureau of Air Quality and EPA within 30 days after the end of each calendar quarter, detailing the following for the parameter monitors, Continuous Emission Monitoring Systems (CEMS), or Continuous Opacity Monitoring Systems (COMS) required by this license:

- 1. All control equipment downtimes and malfunctions;
- 2. All CEMS or COMS downtimes and malfunctions;
- 3. All parameter monitor downtimes and malfunctions;
- 4. All excess events of emission and operational limitations set by this Order, Statute, state or federal regulations, as appropriate. The following information shall be reported for each excess event:
 - a. Standard exceeded;
 - b. Date, time, and duration of excess event;
 - c. Maximum and average values of the excess event, reported in the units of the applicable standard, and copies of pertinent strip charts and printouts when requested;
 - d. A description of what caused the excess event;
 - e. The strategy employed to minimize the excess event; and
 - f. The strategy employed to prevent recurrence.
- 5. A report certifying there were no excess emissions, if that is the case.

[MEDEP Chapter 117]

(34) **Semiannual Reporting** [MEDEP Chapter 140]

The licensee shall submit semiannual reports every six months to the Bureau of Air Quality. The semiannual reports are due with every other quarterly report, and the initial semiannual report is due April 30, 2002 with the second quarterly report submitted following the date of signature of this license.

- A. Each semiannual report shall include a summary of the periodic monitoring required by this license. The periodic monitoring required by this license is as follows:
1. The rolling 12-month total of propane fired into Boiler 1.
 2. Summary page of the results of stack testing for PM, PM₁₀, SO₂, NO_x, CO and VOC when requested.
 3. A photocopy of the daily Primary and Secondary ESP voltages.
 4. A photocopy of the daily Primary and Secondary ESP currents.
 5. Monthly total of each fuel burned in Boiler 1 for each day (wood and propane).
 6. A photocopy of the maintenance log for Boiler 1 showing preventative maintenance actions performed in the past six months.
 7. Tons of NO_x emitted in the past 12 months.
 8. Summary of the quantity of fuel burned in the Emergency Generator and Fire Pump (diesel fuel) over the past six months.
 9. Diesel fuel oil sulfur content of the diesel fuel burned over the past six months.
- B. Each semiannual report shall include the annual capacity factor of Boiler 1 for each fuel.
- C. All instances of deviations from license requirements and the corrective action taken must be clearly identified and provided to the Department in summary form for each six-month interval.

(35) **Compliance**

Compliance with all license limits and standards shall be subject to the provisions of 38 M.R.S.A. § 349(9).

[MEDEP Chapter 140]

(36) **Annual Compliance Certification**

IMEWE shall submit an annual compliance certification to the Department and EPA in accordance with Condition (20) of this license. The initial annual compliance certification is due October 30, 2002 with the submittal of the second semiannual report after the signature date of this license.

[MEDEP Chapter 140]

(37) **Annual Emission Statement**

In accordance with MEDEP Chapter 137, the licensee shall annually report to the Department, by September 1, the information necessary to accurately update the State’s emission inventory by means of:

- 1) A computer program and accompanying instructions supplied by the Department;
or
- 2) A written emission statement containing the information required in MEDEP Chapter 137.

Reports and questions should be directed to:

Attn: Criteria Emission Inventory Coordinator
Maine DEP
Bureau of Air Quality
17 State House Station
Augusta, ME 04333-0017

Phone: (207) 287-2437

(38) The licensee is subject to the State regulations listed below.

<u>Origin and Authority</u>	<u>Requirement Summary</u>
Chapter 102	Open Burning
Chapter 109	Emergency Episode Regulation
Chapter 110	Ambient Air Quality Standard
Chapter 116	Prohibited Dispersion Techniques

(39) **Certification by a Responsible Official**

All reports (including quarterly reports, semiannual reports, and annual compliance certifications) required by this license to be submitted to the Bureau of Air Quality must be signed by a responsible official.

[MEDEP Chapter 140]

Indeck Maine Energy, L.L.C.) **Department**
Penobscot County) **Findings of Fact and Order**
West Enfield, Maine) **Part 70 Air Emission License**
A-91-70-A-I **28**

(40) The term of this license shall be five (5) years from the signature date below.

DONE AND DATED IN AUGUSTA, MAINE THIS _____ DAY OF _____ 2001.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
MARTHA G. KIRKPATRICK, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of Title V application: October 22, 1997

Date of Title V application acceptance: October 23, 1997

Date filed with the Board of Environmental Protection _____

This Order prepared by Mark E. Roberts, Bureau of Air Quality.