### SECTION 15 GROUNDWATER

#### A. Location and Maps

The Project is located within the Caratunk and Dimmick Mtn U.S. Geological Survey quadrangles. The Maine Geological Survey online database (MGS Database<sup>24</sup>) Significant Sand and Gravel Aquifer Maps (Figure 15-1) show that there are no mapped significant sand and gravel aquifers or aquifer recharge areas in the Project area. The nearest mapped aquifer is located approximately 1 mi east of turbine 8.

The MGS Database Surficial Geology Maps (Figure 15-2) show that the Project area consists of a heterogeneous mixture of sand, silt, clay and stones, with many large boulders but generally contains beds and lenses of variably washed and stratified sediments. The MGS Database Bedrock Maps (Figure 15-3) show the area underlying the Project consists of Devonian – Marine Sandstone in the north, grading to Silurian – Devonian bedrock throughout the remainder of the Project area. Silurian – Limy marine shale is located east and south of the Project area where ADLS-2A is proposed.

According to the Maine Drinking Water Program there are no known public drinking water supply wells within 100 feet of the Project area. The closest public drinking water supply well is approximately 1.95 mi west of the proposed ADLS Tower (ADLS-2A) and approximately 3.5 mi west of turbine (T14) (Figure 15-4). Known structures within the Project area include three existing buildings associated with the former USAF Radar Station (owned by the Applicant), and each of these structures include an existing private water supply well. These are the only known private wells within the Project area. There are no U.S. Environmental Protection Agency-designated sole source aquifers located in the Project area.<sup>25</sup>

#### B. Quantity

A single drilled bedrock well will be used to serve the water needs at the O&M building, and its proposed location near the O&M building is not within any mapped significant sand and gravel aquifers. Approximately 120 gallons of water will be needed per day to support the O&M building and it is anticipated that a sufficient source of water exists at the site (see Section 16 [Water Supply] for more information).

#### C. Sources of Contamination

Potential sources of groundwater contamination during construction include fuel, and hydraulic and lubricating oils used in the operation of vehicles and construction equipment. Any spills of these materials from construction vehicles or equipment are typically small and of very short duration. Spills that are properly contained, controlled and cleaned up in a timely manner should not pose a risk to groundwater quality. Procedures for handling these materials and preventing spills will be provided in a Construction Spill Prevention Control and Countermeasure (SPCC) Plan to be developed for the Project. The Project-specific SPCC Plan will be provided by the construction contractor and submitted to the MDEP for review prior to the start of construction. The basic elements of the SPCC Plan will provide descriptive procedures, emergency contact telephone numbers (including State and Federal environmental agencies), and oil spill cleanup guidelines. These procedures will establish a set of minimum requirements for spill prevention and response during construction. The procedures will incorporate measures

<sup>&</sup>lt;sup>24</sup> Maine Geological Survey, Department of Agriculture, Conservation and Forestry, 93 State House Station, Augusta, ME 04333-0093. Available online at: <u>http://www.maine.gov/megis/catalog/.</u> Accessed February 8, 2021.

<sup>&</sup>lt;sup>25</sup> USEPA. Designated Sole Source Aquifers in EPA Region 1. Available online at: <u>http://www.epa.gov/region01/eco/drinkwater/pc\_solesource\_aquifer.html.</u> Accessed February 9, 2021.

developed and fine-tuned from experience gained during construction of other wind turbine projects, and will address input received from MDEP and other review agencies. The procedures to be incorporated into the SPCC Plan have proven successful for preventing spills and addressing cleanup of spills if they occur. Both contractors and environmental inspectors employed on the Project will ensure that all personnel working on site follow these procedures.

During Project operation, petroleum, synthetic gear oil, or hydraulic oil will be present and used for O&M of the wind turbines. The oil in the turbines will be replaced or recycled every 3–5 years. The main gearbox of each turbine holds approximately 267-282 gallons (1,011 to 1,069 liters), depending on the gearbox model and manufacturer. The yaw and pitch gearboxes hold a combined 5 gallons (17 liters), with an additional 66 gallons (250 liters) stored in the hydraulic system. The gear and hydraulic cooling system holds approximately 71 gallons (270 liters) of coolant fluid and the generator and converter cooling system holds approximately 57 gallons (215 liters) of cooling fluid. Large amounts of petroleum products will not be stored on-site and only smaller amounts needed to maintain the fluid levels in the turbines will be stored for any significant amount of time. All products and waste oils that are stored within the O&M building will be inventoried within the Operations SPCC plan and stored within secondary containment inside the building. There is no external floor drain planned for use in the O&M building. If a floor drain is determined to be present in the existing building its use will either be discontinued, or an oil/water separator will be installed on the drain line outside the building to protect against oil releases to groundwater or adjacent natural resources.

Substations and transmission line facilities constructed and/or modified as part of the Project will include equipment that contains fuels and lubricants, as well as oil-filled electrical components The Substation will be constructed with engineered perimeter and/or subsurface oil containment to minimize the potential for oil releases to groundwater or adjacent natural resources.

Procedures for handling these materials and preventing spills will be outlined in a site-specific Operations SPCC Plan to be prepared in accordance with the requirements of 40 C.F.R. Part 112. The Operations SPCC Plan will be submitted to the MDEP for review prior to the commercial operation date of the facility. An example SPCC plan prepared for the Canton Mountain Wind Project, which is owned and operated by Patriot is provided in Exhibit 15-1 (Canton SPCC Plan). Similar to the procedures identified in the SPCC included in Exhibit 15-1 (Canton SPCC Plan), employees working on-site will receive annual training to promptly contain, report, and clean up spills in accordance with the procedures outlined in the operational SPCC Plan, should an event of an oil or hazardous material spill occurs on the Project site. In addition, as a standard operating procedure, an oil spill kit that contains material for conducting initial containment and clean-up of spills will be located in operational vehicles and at the O&M building.

A subsurface wastewater disposal system will be installed at the O&M building to treat up to 120 gallons of residential wastewater per day. A licensed site evaluator has concluded that site conditions will allow for a safe wastewater disposal system to be installed that will not adversely affect existing groundwater resources, particularly given the low level of water use that will occur at the facility (see Section 17 [Wastewater Disposal] for more information).

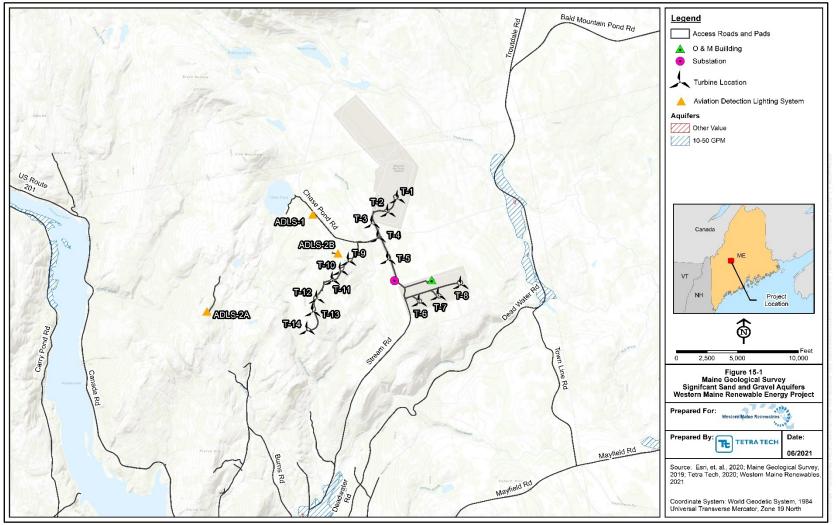
#### **Figures**

Figure 15-1 Maine Geological Survey, Significant Sand and Gravel Aquifers Figure 15-2 Maine Geological Survey, Surficial Geology Figure 15-3 Maine Geological Survey, Bedrock Geology Figure 15-4 Maine Geological Survey, Public Drinking Water Supply

#### Exhibits

• Exhibit 15-1 Canton SPCC Plan

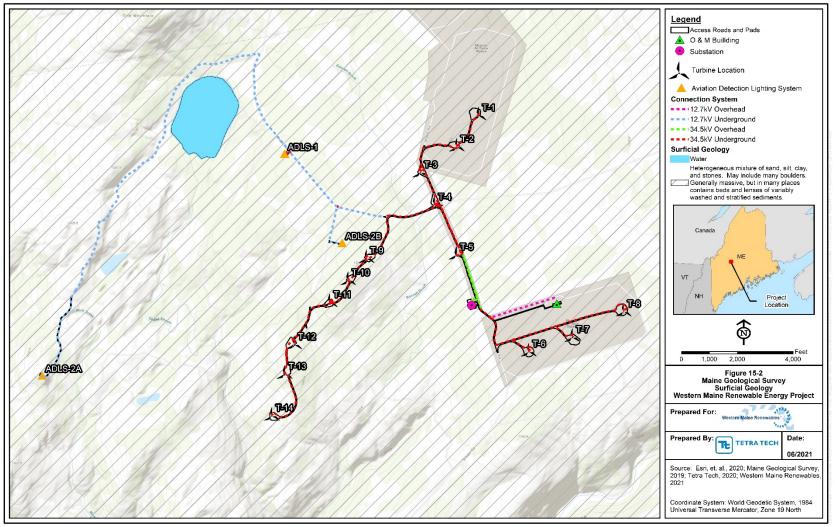
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Not for Construction

Figure 15-1 Maine Geological Survey, Significant Sand and Gravel Aquifers.

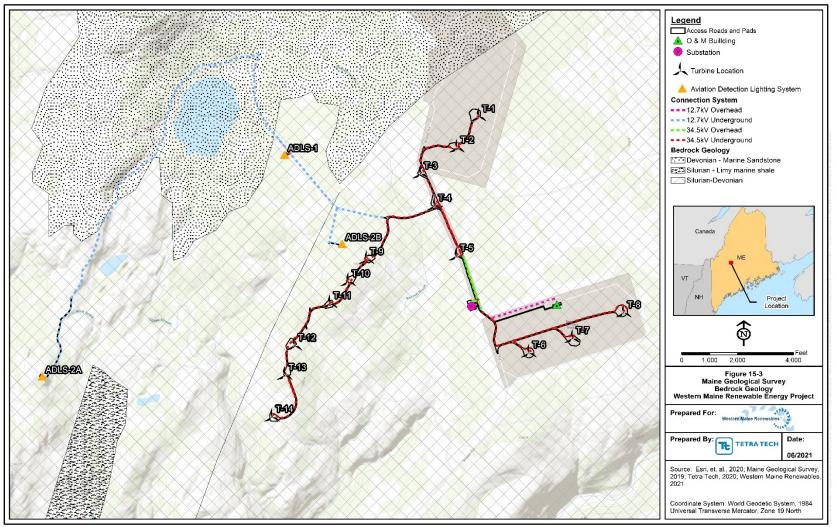
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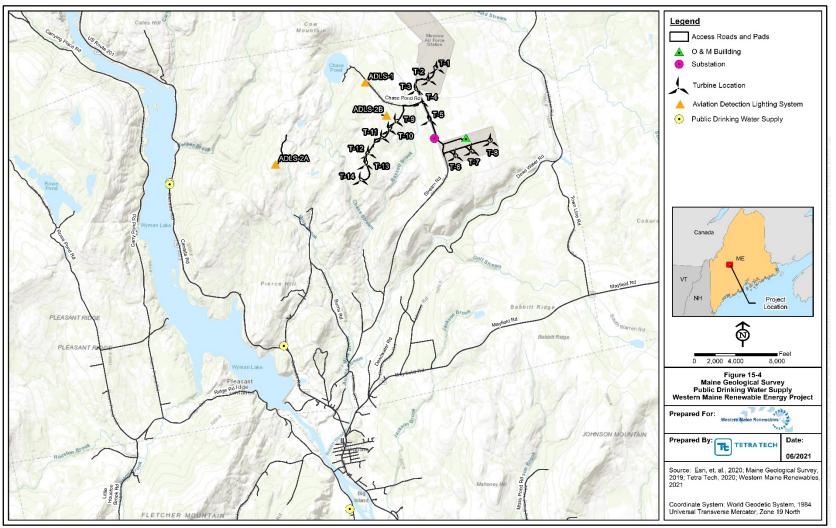
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Not for Construction

#### Figure 15-4 Maine Geological Survey, Public Drinking Water Supply.

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EXHIBIT 15-1 CANTON SPCC PLAN



## Spill Prevention, Control, and Countermeasure Plan

Canton Mountain Wind Project

Canton, Maine



Prepared for:

Canton Mountain -Wind-

*Prepared by:* Tetra Tech, Inc. July 2017

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- Appendix E Emergency Contacts
- Appendix F Facility Spill Response Materials
- Appendix G Employee Training Log
- Appendix H Substantial Harm Criteria Checklist



## ACRONYMS AND ABBREVIATIONS

CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
Facility	Canton Mountain Wind Project
ft	feet/foot
kV	kilovolt
m	meter(s)
MDEP	Maine Department of Environmental Protection
MW	megawatt
MVA	mega volt-ampere
O&M	operations and maintenance
PE	Professional Engineer
Project	Canton Mountain Wind Project
SPCC	Spill Prevention Control and Countermeasure
SPI	Solidification Products International
CMW	Canton Mountain Wind, LLC
WTG	wind turbine generator



#### MANAGEMENT APPROVAL & REVIEW

#### MANAGEMENT APPROVAL

Canton Mountain Wind, LLC (CMW) is committed to the prevention of discharges of oil to navigable waters or the environment, and maintains the highest standards for spill prevention control and countermeasures through periodic review, updating, and implementation of this Spill Prevention, Control, and Countermeasure (SPCC) Plan. CMW will provide the manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged at the Canton Mountain Wind Project (Facility) that may be harmful.

Authorized Facility Representative: Undsay Calbrath Signature Wilson ( Title: Senior Asset Manager Date 8/4/2017

#### MANAGEMENT REVIEW

A review and evaluation of this SPCC Plan is conducted at least once every five years. As a result of this review and evaluation, CMW will amend the SPCC Plan within six months of the review to include more effective prevention and control technology if: (1) such technology will significantly reduce the likelihood of a spill event from the Facility, and (2) such technology has been field-proven at the time of review.

This SPCC Plan also will be amended within six months of a change in the Facility design, construction, operation, or maintenance that materially affects the Facility's potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines.

Any technical amendment to the SPCC Plan shall be certified by a Professional Engineer.

Review Dates	Signature	Amendment Required? (Y/N)



#### **PROFESSIONAL ENGINEER'S REVIEW**

The undersigned Registered Professional Engineer (PE) is familiar with the requirements of Chapter 40 of the Code of Federal Regulations Part 112 (40 CFR 112) and has supervised examination of the Facility. The undersigned Registered PE attests that this Spill Prevention, Control, and Countermeasure Plan has been prepared in accordance with good engineering practices including applicable industry standards, and in accordance with the requirements of 40 CFR 112; that procedures have been established for required inspections and testing; and that the Plan is adequate for the Facility.

Thomas & Cioh

Signature

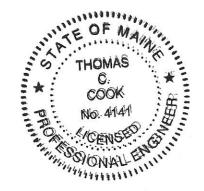
Thomas C. Cook Name

Principal Civil Engineer Title

Tetra Tech, Inc. Company

July 31, 2017 Date

4141 PE Registration Number





## 1.0 INTRODUCTION

This Spill Prevention, Control, and Countermeasure (SPCC) Plan, prepared by Canton Mountain Wind, LLC (CMW), outlines the procedures, methods, and equipment used at the Canton Mountain Wind Project (Project or Facility) to comply with the U.S. Environmental Protection Agency (EPA) oil spill prevention, control, and countermeasures standards, and to comply with inspection, reporting, training and record keeping requirements. Pursuant to 40 Code of Federal Regulations (CFR) 112.1, an SPCC Plan must be prepared and implemented for facilities that could reasonably be expected to discharge oil into or upon navigable waters or adjoining shorelines, and that meet one of the following conditions:

- Above-ground oil storage capacity exceeds 1,320 gallons; or
- Underground oil storage capacity exceeds 42,000 gallons, unless the underground tanks are subject to all of the technical requirements of 40 CFR 280 or a state program approved under 40 CFR 281. (Maine's approved program is described under Maine Laws and Rules, Chapter 691 Rules for Underground Storage Facilities.)

As defined by 40 CFR Part 112, oil includes all grades of motor oil, hydraulic oil, lube oil, fuel oil, gasoline and diesel, automatic transmission fluid, waste oil, and transformer mineral oil. The definition of oil also includes non-petroleum oils such as animal or vegetable oils and synthetic oils.

#### 1.1 Purpose

The hierarchical objectives of the SPCC Plan are as follows:

- PREVENT spill from occurring
- PREPARE for a potential spill
- RESPOND quickly and appropriately if a spill does occur

#### 1.2 Using the Plan

In addition to satisfying a regulatory requirement, this SPCC Plan should be a working document at the Facility. A copy of this SPCC Plan will be stored in the Project's O&M building. The Plan should be frequently used in the following ways:

- As a reference for oil storage and containment system information,
- As a tool for informing new employees and refreshing existing employees on practices for preventing and responding to spills,
- As a guide to periodic training programs for employees,
- As a guide to Facility inspections, and
- As a resource during an emergency response.



## 1.3 SPCC Plan Revisions

This Plan is to be reviewed and evaluated at least once every five years by the Spill Prevention Coordinator. The review will be documented and noted on the attached Management Review Log.

This Plan is to be amended whenever there is a change in Facility design, construction, operation, or maintenance procedure that materially affects the potential for an oil spill. Examples of the types of changes that may require amendment of the Plan include the following:

- Commissioning or decommissioning tanks;
- Replacement, reconstruction, or installation of oil containers;
- Construction or demolition that might alter secondary containment structures; and
- Revision of standard operation or maintenance procedures.

Amendments to the Plan because of these types of changes are called technical amendments and must be certified by a Professional Engineer (PE).

Other changes are called nontechnical amendments and do not need to be certified by a PE. Nontechnical amendments include the following:

• Change in name or contact information (e.g., telephone numbers) for individuals responsible for this SPCC Plan.

Both technical and nontechnical amendments must be documented in the attached Management Review Log. All amendments to this SPCC Plan will be signed and certified by the owner/operator. A copy of the revised SPCC Plan will be filed with Maine Department of Environmental Protection (MDEP).

This SPCC Plan is to be amended within six months of a change and implemented within six months following preparation of the amendment.

## 1.4 Facility Description

This section describes the Facility, including the Project area, wind turbine generators (WTG), operations and maintenance (O&M) building, collector lines and substation containing a 25 mega volt-ampere (MVA) transformer, and the oil containers and equipment.

#### 1.4.1 Location and Use

The Project is a 22.8-megawatt (MW) wind energy generation facility situated on approximately 2,978 acres of land in Canton, Maine. The Project consists of eight General Electric model 2.85-103 wind turbines with a nameplate capacity of 2.85 MW each. General Electric's wind turbine brochure is provided in Appendix A and provides more detail on the wind turbines. A right-of-way for approximately 2.7 miles of a 34.5-kilovolt electric transmission line is secured by leases and easements, and the Project will interconnect to the electric grid at Central Maine Power's 115 kilovolt (kV) Ludden Lane Substation. CMW



will provide a copy of this SPPC to Central Maine Power to improve site-specific coordination and for their use in spill control planning at their existing substation.

Project facilities, including the turbines, ridgeline roads, and O&M building, are located in the Town of Canton, Oxford County, Maine (Figure 1). The access roads and the electric transmission line that will convey electricity from the turbines to the existing transmission grid runs through both Dixfield and Canton, in Oxford County, Maine. Appendix B contains information on the Substation General Arrangement Plan.

In general, the oil containers or oil-filled equipment covered by this SPCC Plan are as follows:

- Gear boxes located inside the wind turbine structures;
- High voltage electrical transformer at substation containing mineral oil; and,
- 55-gallon drum storage of oil products in the O&M building.

There are no underground storage tanks at the facility.

#### 1.4.2 Topography

The Project site contains areas of steep topography and thick forested landscape. Topography of the ridge between the northernmost and southernmost turbines ranges from 404 m (1,324 ft) to 469 m (1,538 ft) in elevation.

#### 1.4.3 Drainage and Water Bodies

The Town of Canton, including the Project area, is located within the Androscoggin River (3) above Webb River Watershed (HUC 01040002). Several streams and numerous wetlands are located throughout the Project area, including palustrine emergent, palustrine forested, and palustrine scrub-shrub wetlands. The Project includes upgrades to 10 existing stream crossings, five perennial and five intermittent, during the upgrade of Ludden Lane and the unnamed logging road, and to install one new crossing of an intermittent stream during the construction of the proposed access road to the ridgeline.

Placement of the turbines for the Project was designed to include a 100-ft setback from all waterbodies. Use of herbicides is prohibited within 75 ft of riparian buffers and within 25 ft of wetlands that contain visible water at the surface. Additionally, no refueling or maintenance is allowed within the 75-ft riparian buffer or within 25 ft of any wetlands with visible water at the surface. A 100-ft riparian buffer will be maintained adjacent to MDEP-regulated rivers, streams, and brooks (with the exception of crossings and existing roads) to protect fisheries wherever practicable. The Project is not located within a flood zone.



## 1.4.4 Summary of Oil Containers and Equipment

Table 1 summarizes the oil containers and equipment to be used.

	Table 1. Sur	mmary of Oil Containe	ers and Equipment	
Container or Equipment ID	Number of Units	Unit Capacity (gallons)	Total Capacity (gallons)	Oil Product Stored
Oil-Filled Equipment				
Grounding transformer	1	691	691	Type II Mineral Oil
WTG gear boxes	8	180	1,440	Synthetic Gear Oil
Turbine gearbox fluid	8	127	1,016	Gearbox Fluid
Turbine gearbox cooler and lines	8	40	320	Gearbox Coolant
Turbine secondary brake HPU	8	2	16	Brake Fluid
Hydraulic/Electric units	8	32	256	Hydraulic Oil
Turbine pitch and yaw transfer case	8	26	208	Oil
Turbine yaw brake and rotor lock HPU, calipers, lines, etc.	8	13	104	Yaw Brake Fluid
IGBT coolant	8	30	240	Coolant
Substation Transformer	1	4,345	4,345	Type II Mineral Oil
Oil Storage Containers				
55-gallon drum	4	55	220	Synthetic Gear Oil & Hydraulic Oil
Total Facility Storage Capacity (gallons) = 8,856				



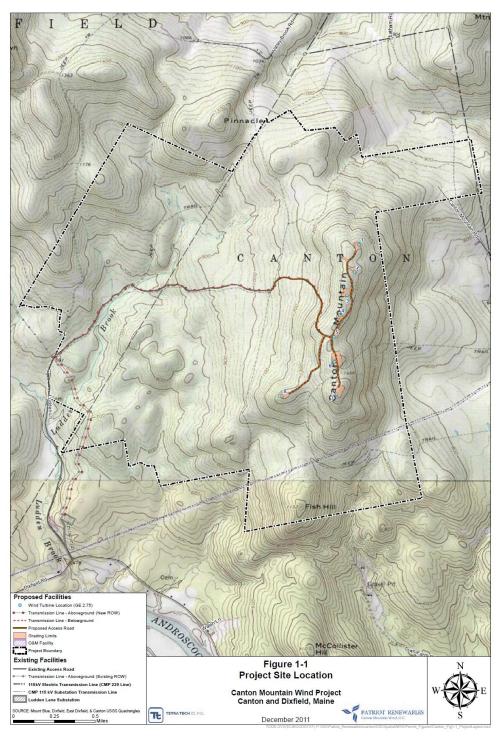


Figure 1. Canton Mountain Wind Project, Location Map



## 2.0 PLAN REQUIREMENTS AND ACTIVITIES

This section describes the following general SPCC Plan requirements:

- Fault analysis and containment measures;
- Inspections;
- Spill response;
- Record-keeping;
- Training; and,
- Security.

No additional state or local requirements pertaining to oil spill prevention were identified.

#### 2.1 Fault Analysis and Containment Measures

The development of this SPCC included analyzing each oil-filled equipment or container for the following:

- A determination of the most likely spill scenario based on good engineering practice;
- An evaluation of the appropriateness of passive containment measures provided in the original facility design and construction; and,
- An evaluation of the appropriateness of active containment measures for other equipment not originally provided with passive containment measures

Table 2 provides a summary of the secondary containment strategy for oil-filled equipment and containers at the Facility.

	Table 2. Summa	ry of Secondary Containment Strategy	
Container or	Maximum Potential Spill	Description of Containment Measures	
Equipment ID	(gallons)		
Oil-Filled Equipment			
Grounding	691	None	
transformers	031	None	
WTG gear boxes	180	Nacelle and Tower Containment	
Hydraulic/Electric units	32	Nacelle and Tower Containment	
Turbine pitch and yaw	26	Overpressure blow off valve and self-contained 55 gallon spill drum	
transfer case	20	built into the basement for an overpressure event	
Substation	4,345	Foundation Catchment with a 18" Petro-Barrier, which is an SPI	
Transformer		(Solidification Products International, Inc.) product	
Oil Storage Containers			
55-gallon drum	55	Will be placed on Spill Containment Pallets	



### 2.1.1 Evaluation of Active Containment Measurers for Gear Boxes

As described in Section 1.4, the facility includes gear boxes, step-up transformer and hydraulic units at each of the eight WTG sites. The step-up transformers are dry units with no oil storage capacity and thus not regulated by SPCC. The gear boxes contain up to 180 gallons of oil each. The hydraulic units and electric gear cases are below 55 gallons and thus exempt from SPCC regulation though secondary containment is provided via the "nacelle" itself in the same way as outlined below for the gear boxes.

The set up for this site is unique in that the step-up transformers and gear boxes are located in the wind turbine nacelle itself. As such, the nacelle itself will serve as secondary containment so secondary containment around the concrete foundations or otherwise is not necessary. In the event of a spill the nacelle is designed to contain all of the oil. Any oil spillage from any of the oil filled equipment or reservoirs that did escape from the nacelle would drain within the tower. The wind tower is set on concrete and tightly sealed around the pedestal and tower base with epoxy or similar seal on the flange at the bottom of the tower.

In a worst case scenario there would potentially be an instantaneous release of 180 gallons from the gear box. In this case the spill will be contained within the sealed concrete tower floor base. Spills from nacelle will drip along the tower to the base. A minimal amount of oil, i.e. less than a gallon, could potentially make it to the ground in a worst case scenario situation. Passive containment is provided by the tower nacelle and tower in combination with active measures to recover small amounts of oil that make it to the ground.

#### 2.1.2 Evaluation of Active Containment Measurers for Grounding Transformers

The grounding transformer is pad-mounted and away from any bodies of water. Active containment measures are used to control and remove any potential spills from the large, flat gravel area surrounding the grounding transformer location.

#### 2.1.3 Evaluation of Active Containment Measurers for Substation 115 kV Transformer

The 25 MVA 115 kV transformer is pad-mounted at the substation in Canton and away from any bodies of water. The transformer sits on a pad surrounded by a containment moat (sufficient to contain a complete oil spill) with Solidification Products International (SPI) Oil Barriers interfaced to drainage fields. This system allows water to drain but will contain an oil release by the transformer and the SPI Barrier will not allow the oil to drain. Active containment measures are used to control and remove any potential spills from the large, flat gravel area surrounding the grounding transformer location. There is also high-temperature fault detection system in place which will notify Facility personnel to investigate.

## 2.2 Test and Inspections

The facility includes bulk oil storage containers (55-gallon drums) and oil-filled operating equipment (electrical transformer and gear boxes). Industry standards for inspections of 55-gallon drums include the *Steel Tank Institutes SP001 Standard for Inspection of Aboveground Storage Tanks, Third Edition*, issued July 2005. The standard calls for owner-performed inspections conducted at least monthly. Containers will be stored so that all sides are visible (i.e., the container has no contact with the ground). If the container starts to degrade (e.g., begins to rust, or oxidize if a poly drum), the contents of the container will be



transferred to a new drum compatible with the material. The 55-gallon drums will also be placed on Spill Containment Pallets when stationary. These controls are expected to provide environmental protection equivalent to integrity testing.

Formal monthly inspections for the transformers and gear boxes (exterior portion of nacelle and tower) have also been deemed appropriate for the facility at this time. Weekly "drive by" inspections will also be performed. A monthly inspection checklist is provided in Appendix C.

## 2.3 Spill Response Procedures

Facility employees are trained to implement spill prevention practices for work with and around oil sources. Facility personnel shall use common sense and rely on spill prevention practices at all times to minimize the potential for a release of oil. A list of Emergency Contacts s included in Appendix E and a list of spill response materials kept at the Facility is included in Appendix F.

CMW has implemented the following "common sense" practices:

- keep container lids securely fastened at all times;
- do not leave portable sources unattended (outside);
- return portable sources to their storage location after use;
- use pads, drip pans, and funnels when transferring petroleum products from a portable container;
- protect oil sources from damage by moving equipment;
- do not store oil sources near catch basins or floor drains; and
- loading and unloading of petroleum products shall be attended at all times.

Spill prevention during oil deliveries (offloading) is the primary responsibility of the supplier until the product is safely in the tank or vessel. Vehicle filling is the responsibility of Facility personnel. CMW implements spill prevention measures for loading, vehicle filling, and truck unloading operations.

#### 2.3.1 Minor Spill Response

A "Minor Spill" is defined as one that poses no significant harm to human health or the environment. These spills generally involve less than 5 gallons and can usually be cleaned up by Facility personnel. Other characteristics of a minor spill include the following:

- The spilled material is easily stopped or controlled at the time of the spill,
- The spill is localized,
- The spilled material is not likely to reach surface water or groundwater,
- There is little danger to human health, and
- There is little danger of fire or explosion.

In the event of a minor spill the following guidelines shall apply:

• Stop the source if the spill is ongoing



- Immediately notify the senior onsite person (i.e., Facility Manager)
- Call MDEP (1-800-482-0777) within two hours
- Under the direction of a senior onsite person, contain the spill with spill response materials and equipment
- Place spill debris in properly labeled waste containers
- Complete the *Spill Notification Form* (Appendix D) and send to the Environmental Compliance Officer

#### 2.3.2 Major Spill Response

A "Major Spill" is defined as one involving a spill that cannot be safely controlled or cleaned up. Characteristics include the following:

- The spill is large enough to spread beyond the immediate spill area,
- The spilled material enters surface water or groundwater (regardless of spill size),
- The spill requires special training and equipment to cleanup,
- The spilled material is dangerous to human health, and/or
- There is a danger of fire or explosion.

In the event of a spill emergency, the following guidelines shall apply:

- Stop the source if the spill is ongoing only if safe to do so.
- All workers shall immediately evacuate the spill site and move to a safe distance away from the spill.
- A senior onsite person shall call for medical assistance if workers are injured (no worker shall engage in rescue operations unless they have been properly trained and equipped).
- A senior onsite person shall immediately contact MDEP (1-800-482-0777) and the National Response Center (1-800-424-8802). Document the telephone calls on the *Spill Notification Form* in Appendix D.
- Notify the local Fire Department or Police Department (see Appendix E for a list of emergency contacts).
- A senior onsite person shall contact the Facility Manager and provide details regarding the spill.
- The Facility Manager or Environmental Compliance Officer will coordinate cleanup and seek assistance from a cleanup contractor as necessary.

If a senior onsite person is not available at the time of the spill, then the next highest Facility employee in command shall assume responsibility.



#### 2.3.3 Waste Disposal

Non-hazardous wastes resulting from a minor spill response will be containerized in impervious bags, drums, or buckets. Unsaturated oil spill cleanup debris will be disposed of as special waste by a licensed waste hauler within two weeks. Any saturated oil spill cleanup debris or recovered free product will be stored in drums and either reused as fuel or disposed of properly. Wastes resulting from a major spill response will be removed and disposed by a cleanup contractor.

## 2.4 Notification and Reporting

After making the appropriate phone calls and the spill is contained, a *Spill Notification Form*, included in Appendix D, shall be completed and submitted to the Environmental Compliance Officer. The *Spill Notification Form* includes a checklist to document the proper notification of state and federal agencies. The form shall be maintained as long as CMW owns and/or operates this Facility.

If a single spill greater than 1,000 gallons occurs, or two spills each greater than 42 gallons occur within any 12 month period at this Facility, the Environmental Compliance Officer shall, in addition to following the notification procedures above, provide written information to the EPA Regional Administrator as required by the federal SPCC rules. A copy of this information must be provided to MDEP.

### 2.5 Training

CMW shall provide SPCC spill training for personnel involved with handling petroleum products. The Environmental Compliance Officer shall arrange for annual training, which shall include the following training topics:

- An introduction to pollution control laws;
- Rules and regulations pertaining to the use and storage of petroleum products;
- Inspection, operation, and maintenance of spill equipment, and petroleum storage and dispensing equipment;
- Spill response and cleanup;
- Spill notification and record keeping; and
- Spill prevention practices.

The annual SPCC training shall be documented to include the instructor's name, course outline, date and duration of training, attendants' names and signatures, and a corrective action list for areas in need of improvement, if any. This information shall be filed and maintained for at least three years at the office of the Environmental Compliance Officer. A Certificate of Training shall be presented to each Facility employee who has completed the training. The Environmental Compliance Officer shall forward a copy of this certificate to the Human Resources Department for inclusion in the employee's file. An Employee Training Log is included in Appendix G.

#### 2.6 Security

To prevent a spill or release from being caused by accidental or unknown entry or vandalism, several security measures have been implemented, as follows:



- The O&M building can only be accessed by Facility personnel and will be locked when not in use. The O&M building is also monitored 24-7 by a remote operating center.
- WTG towers are locked.
- Sufficient lighting and security are provided throughout the O&M building to allow for spill detection and the prevention and discovery of vandalism.

## Appendix A General Electric: Introducing GE's 2.85 MW Wind Turbines

GE Power & Water Renewable Energy

# Introducing GE's 2.85 MW Wind Turbines 2.85-100 2.85-103

Increased customer value... through product evolution

## ecomagination



imagination at work

Product evolution. It's one of the things GE does best. Especially when it comes to the next generation of wind turbines. Building on a strong power generation heritage spanning more than a century, our onshore wind turbines deliver proven performance, availability and reliability—creating more value for our customers.

As one of the world's leading wind turbine suppliers, GE's current product portfolio includes wind turbines with rated capacities ranging from 1.5 MW–4.1 MW and support services extending from development assistance to operation and maintenance.

## GE's 2.85-100 Wind Turbine

GE's 2.85-100 wind turbine offers a 3% increase in Annual Energy Production (AEP) at 8.5 m/s when compared to the 2.75-100 wind turbine. This nameplate rating increase allows greater energy capture and improved project economics for wind developers. GE's proprietary 48.7 meter blade uses the same proven aerodynamic shape found on the 2.75-100.

## GE's 2.85-103 Wind Turbine

GE's 2.85-103 wind turbine offers a 6% increase in swept area and a 3% increase in AEP at 8.5 m/s when compared to the 2.85-100. This increase in blade swept area allows greater energy capture and improved project economics for wind developers. GE's proprietary 50.2 meter blade uses the same proven aerodynamic shape as the 48.7 meter blades found on the 2.85-100. Our new, Low Noise Trailing Edge serrations are employed on this turbine to enable siting in sound sensitive areas at full rated power. Testing has shown this design for the blade enables improved turbine acoustics. Low Noise Trailing Edge technology allows increased tip speed tolerance to capture more energy.

GE's 2.85-100 and 2.85-103 wind turbines are available with 75 (50 Hz only), 85, and 98.3 meter hub heights that provide flexible options for Class II and III wind sites, allowing customers to capture the most free fuel in the wind.

GE's stringent design procedures result in a turbine designed for high performance, reliability and availability. Building on the exceptional turbine performance of its predecessors, coupled with selected minimal electrical component modifications, GE's 2.85-100 and 2.85-103 wind turbines provide increased nameplate rating and AEP, with the same reliable performance as the 2.5-100 turbine.

## Building Upon the Proven 1.5 MW and 2.5 MW Platforms

The evolution of GE's multi-megawatt turbine design began with the 2.5s turbine introduced in 2004. The 88-meter rotor diameter turbine was soon increased to 100 meters for the 2.5xl turbine, introduced in 2006. GE's 2.5-100 and 2.75-103 built upon the maturity of their predecessors, and the 2.85-100 and 2.85-103 wind turbines leverage power conversion technology from GE's proven 1.x product line to take the next evolutionary step. These changes help ensure increased capacity factor and availability.

Designed with high reliability to ensure continued operation in the field, GE's 2.85-100 and 2.85-103 can provide greater return on investment.

## **Technical Description**

GE's 2.85-100 and 2.85-103 are three-blade, upwind, horizontal-axis wind turbines with 100-meter and 103-meter rotor diameters, respectively. The turbine rotor and nacelle are mounted on top of a tubular steel tower providing hub heights of 75 (50 Hz only), 85, and 98.3 meters. The machine uses active yaw control to keep the rotor facing into the wind. The new 2.85 wind turbine is designed to operate at variable speed and utilizes a double fed induction generator partial power conversion system. The Transformer, Switch Gear and Auxiliary Equipment can be supplied internal to the base of the tower, or mounted in external housing.

#### Specifications

2.85-100 Wind Turbine:

- Designed to IEC 61400-1
- TC S: 8.5 m/s average wind speed; B-turbulence for 85 meter tower
   TC S: 8.5 m/s average wind speed; B-turbulence for 98.3 meter tower
- Standard and cold weather extreme (60 Hz only) options
- Tower corrosion protection, standard C2 internal and C3 external with optional C4 internal and C5 external available
- Rotational direction: Clockwise viewed from an upwind location
- Speed regulation: Electric drive pitch control with battery backup
- Aerodynamic brake: Full feathering
- 2.85-103 Wind Turbine:
- Same as the 2.85-100 with the following changes
- Low Noise Trailing Edge serrations for ultra-quiet power production
- Larger 103 meter rotor to capture more energy

## **Enhanced Controls Technology**

The 2.85-100 and 2.85-103 wind turbines employ two enhanced control features:

- GE's patented Advanced Loads Control reduces loads on turbine components by measuring stresses and individually adjusting blade pitch
- Controls developed by GE Global Research minimize loads including at near rated wind speeds to improve Annual Energy Production (AEP)

## Construction

**Towers:** tubular steel sections provide hub heights of 75 (50 Hz only), 85 or 98.3 meters.

**Blades:** GE's propriety 48.7 and 50.2 meter blades provide high energy capture without sacrificing acoustic performance.

**Drivetrain components:** GE's 2.85-100/2.85-103 use proven design gearboxes, mainshaft and generators to enable the uprate from 2.75 MW to 2.85 MW.

# Condition Monitoring System

GE's Condition Monitoring System (CMS) and SCADA Anomaly Detection Services, a complementary suite of advanced condition monitoring solutions, proactively detect impending drive train and whole-turbine issues enabling increased availability and decreased maintenance expenses. Built upon half-a-century of power generation drivetrain and data anomaly monitoring experience, this service solution is available as an option on new GE Units and as an upgrade.

### Features and Benefits

- Higher AEP compared to 2.75 MW predecessors
- Designed to meet or exceed the 1.5 MW platform's historic high availability
- Grid friendly options are available
  - Enhanced Reactive Power, Voltage Ride Thru, Power Factor Control
- Wind Farm Control System; WindSCADA\*
- Sharing of components within GE's product family
- GE proprietary 50.2 and 48.7 meter blades
- Ultra-quiet power production Low Noise Trailing Edge serrations as an acoustic enhancement for the 2.85-103
- Available in both 50 Hz and 60 Hz versions for global suitability
- Noise Reduced Operation (NRO)
- Whisper package addresses sound where it occurs
- WindBOOST and WindReserve optimize energy output on wind farm

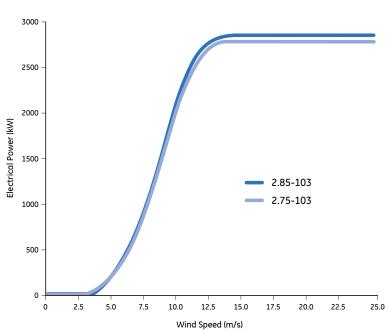
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### GE's 2.85 MW Turbines

- Continual investment. Focused on increasing customer value
- **Evolutionary development strategy.** Built on the world's best running fleet
- **Portfolio flexibility.** Value where you need it, even in sound sensitive locations

# Higher Efficiency

The 2.85 MW wind turbine is equipped with a double fed induction generator that enables higher efficiency. Leveraging this power conversion technology from GE's proven 1.x model has reduced the electrical losses in both converter cable systems, improving power generation performance.



### Performance

Increased customer value... through product evolution

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# Powering the world...responsibly.

For more information please visit www.ge-energy.com/wind.

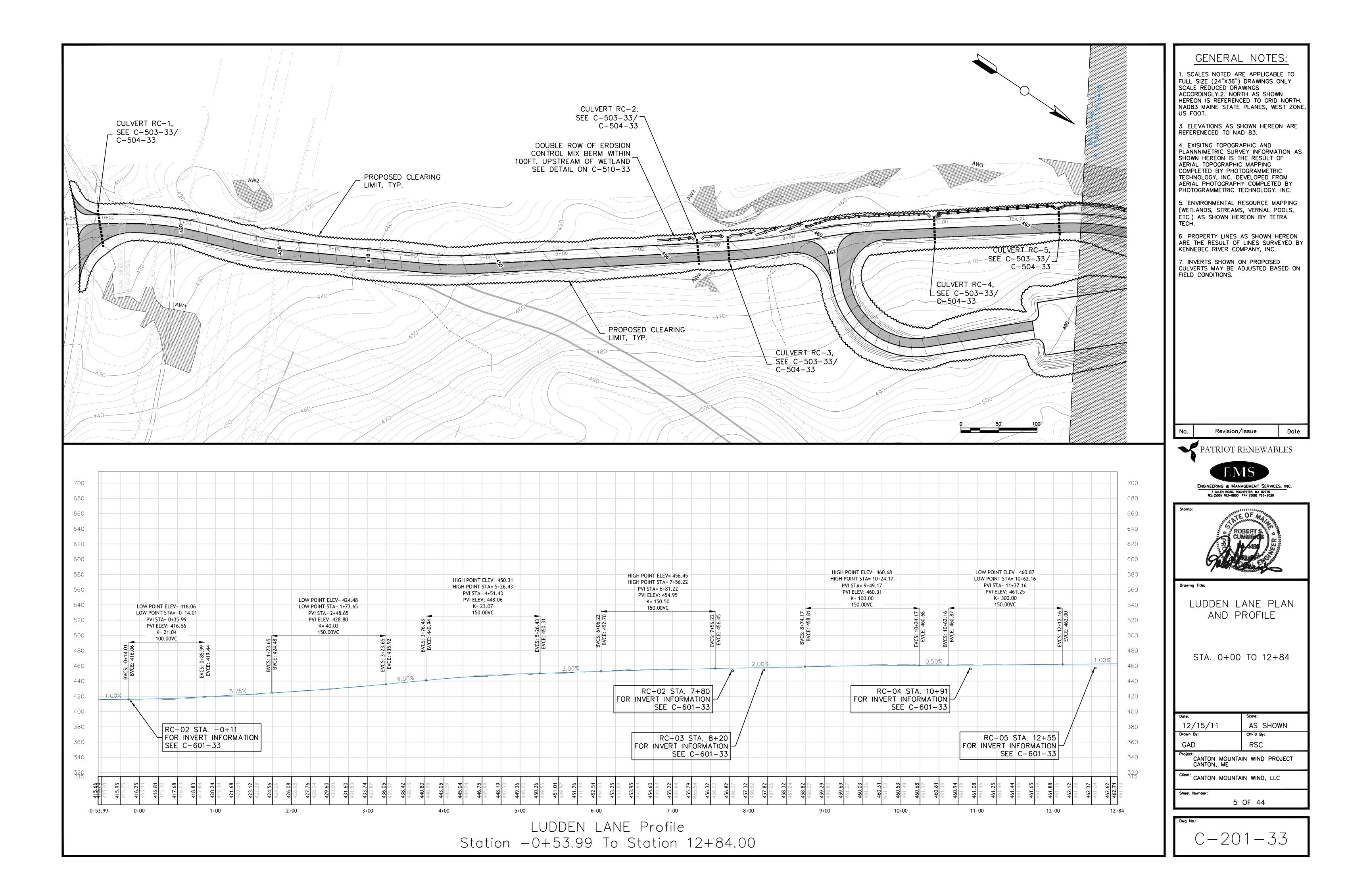


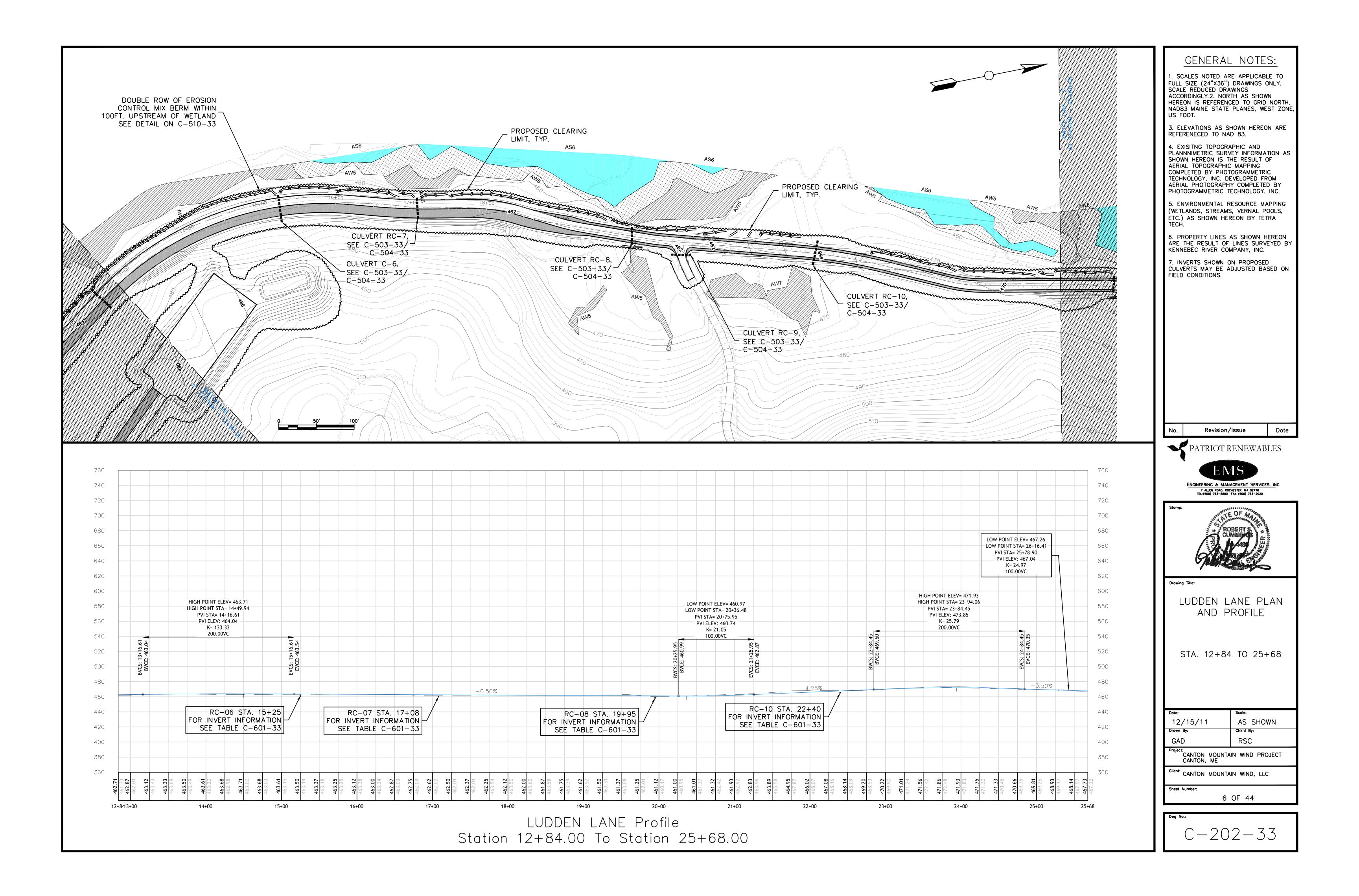


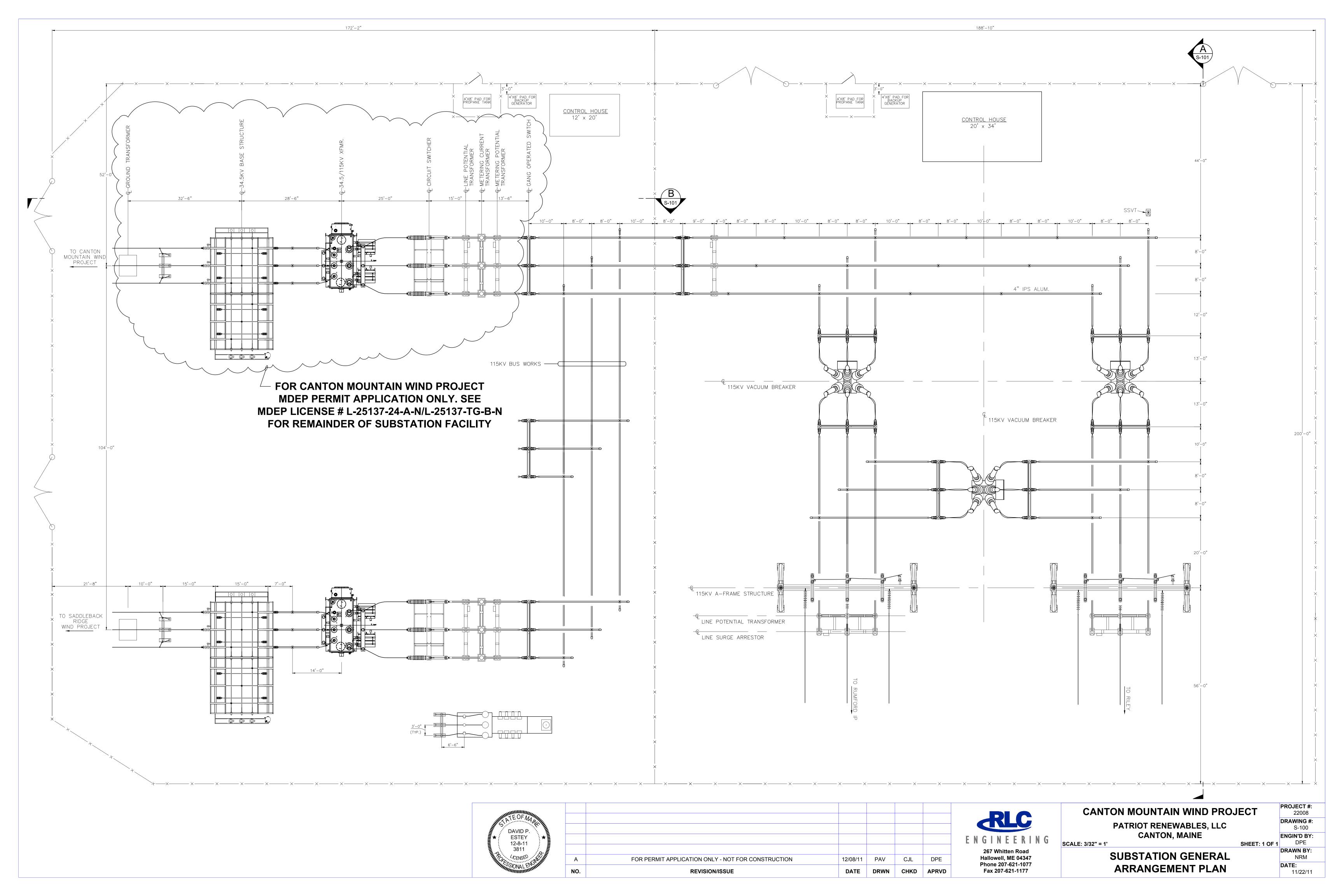
\* Denotes trademarks of General Electric Company

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# Appendix B Site Law of Development Act Permitting Application Schematics







### Appendix C Facility Inspection Checklist & Inspection Records

#### **AST Facility Monthly Inspection Report**

	Tank/Product Capacity					
	TK.1/ gals.	TK.2/ ga	ı ls.	TK.3/ gals.	 TK.4/ gals.	TK.5/ gals.
General Condition of Tank (Note any deformations, corrosion, staining, etc. Check for liquid in the interstitial space of double- walled tanks.)						
Tank Level Gauge and High Level Alarm Functional?						
General Condition of Secondary Containment (Note any cracks, drain valve closed/locked, accumulated stormwater.)						
Foundation/Tank Base (Note any staining, spills, water against base, etc.)						
<b>Pumps, Piping &amp; Dispensers</b> (Check pumps, piping & dispensers for weeps or leaks; check sumps for water/product; and check piping leak detection systems.)						
<b>Oil/Water Separator</b> (Is separator full? Does effluent have a visible sheen?)						
Emergency Response Spill Kits	Location # Kit complete? Kit restocked:			tion # complete? estocked:	Location # Kit complet Kit restocke	

Name: \_\_\_\_\_

This report shall be kept on file for at least three years.

Title:

Signature: \_\_\_\_\_

Date:\_\_\_\_\_

Appendix D Spill Notification Forms & Spill Records

Part A: Basic Spill Data			
Type of Spilled Substance:		Notification Perso	n:
Quantity Released:		Spill Date and Tin	ne:
Location of Spill:		Discovery Date an	d Time:
		SPILL DURATIO	N:
Facility Name & Location:       Canton Mountain         Wind, LLC		Release to: [] air[] well[] soil[] containment[] other	
Owner / Company Name: Canton Mountain Wind, LLC Street , ME		Telephone:Facility:24 hr.:	
Nature of spill and any environmental or heal	th effe	cts:	[] Injuries [] Fatalities
Part B: Notification Checklist			
Spill Type	Notif Time	ication Date and	Name of Person that Received Call
Spill is any amount of petroleum product:			
Maine Department of Environmental Protection 1-800-482-0777			
Spill reaches groundwater or surface water:			
Maine Department of Environmental Protection 1-800-482-0777			
National Response Center 1-800-424-8802			

Send a copy of this form to the Facility Environmental Compliance Officer.

This form shall be filed by facility name and maintained as long as Canton Mountain Wind, LLC owns and/or operates the facility.

### Appendix E Emergency Contacts

#### **Emergency Contacts**

#### **Spill Reporting Hotlines**

Agency	Telephone #
Maine Department of Environmental Protection	1-800-482-0777
Oil Spill Response	
National Response Center	1-800-424-8802
USCG/USEPA	

#### **Local Emergency Agencies**

Agency	Telephone #
Canton Fire Department, Fire Chief - Sherman Bradeen	207-357-2941 or 911
Oxford County Sheriff's Office	207-743-9554 or 911

#### Local Publicly Operated Treatment Works (POTW)\*

Agency	Telephone #
Town of Canton	207-597-2920
* Notify POTW only if oil has reached or threatens to r POTW	reach sewer drains connected to the

#### **Spill Response Contractors**

Company/Location	Telephone #
Clean Harbors Environmental	800-645-8265
Environmental Projects, Inc.	877-846-0447

#### **Owner/Operator**

Name/Title	Telephone #
Ken Pratt, Wind Plant Superintendent	617-405-0013
Susan Owens, Operations Analyst	617-910-8627
Lindsay Galbraith, Senior Asset Manager	617-691-7127

Appendix F Facility Spill Response Materials

#### **Spill Response Kits**

The following are some suggested items for onsite oil spill response kits. Spill kits should be well-marked and kept in readily accessible locations. Facility personnel should be familiar with the location and contents of the spill kits. Note: The number and contents of oil spill response kits will vary with the nature, size, and location of the facility. Response kits should be tailored to the site specific features of the facility.

#### **Oil Spill Response Kit Contents:**

- Drum or other container to hold contents of spill kit
- Drums or other containers to hold contaminated materials (specify number to be kept onsite)
- Loose absorbent for oil (specify amount to be kept onsite)
- Sorbent pads/wipes/pillows/booms/socks (specify amount to be kept onsite)
- Nitrile gloves (specify the number of pairs to be kept onsite)
- Neoprene gloves for cold weather use (specify the number of pairs to be kept onsite)
- Vinyl/PVC pull-on overboots (specify the number of pairs to be kept onsite)
- Nonsparking shovels (specify the number to be kept onsite)
- Brooms (specify the number to be kept onsite)
- Drain seals/plugs/mats (specify the number to be kept onsite)
- Sand bags for dams or underflow weirs (specify number to be kept onsite)

### Appendix G Employee Training Log

#### **Employee Training Log**

Note: New employees shall receive initial training in the contents and implementation of this SPCC Plan upon the start of their employment. All employees shall receive annual refresher training in the contents and implementation of this SPCC plan.

Date of Training	Topics Covered	Names of Employees Attending	Instructors

Appendix H Substantial Harm Criteria Checklist

#### SUBSTANTIAL HARM CRITERIA CHECKLIST

#### **CERTIFICATION OF THE APPLICABILITY**

FACILITY NAME:	
FACILITY ADDRESS:	
1. Does the facility transfer oil over wate capacity greater than or equal to 42,000 Yes	er to or from vessels, and does the facility have a total oil storage gallons? No
facility lack secondary containment that	ge capacity greater than or equal to 1 million gallons, and does the is sufficiently large to contain the capacity of the largest ient freeboard to allow for precipitation within any aboveground
Yes	No
2	ge capacity greater than or equal to 1 million gallons, and is the discharge from the facility could cause injury to fish and wildlife
Yes	No
-	ge capacity greater than or equal to 1 million gallons, and is the discharge from the facility would shut down a public drinking
Yes	No
-	ge capacity greater than or equal to 1 million gallons, and has the l in an amount greater than or equal to 10,000 gallons within the No
105	
CERTIFICATION	
I certify under penalty of law that I have	personally examined and am familiar with the information

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Name (please type or print)

Signature

Date