

Updated June 2012

INDIVIDUAL STORMWATER DISCHARGE PERMIT APPLICATION

1. Applicant Name(s): Entergy Nuclear Vermont Yankee, LLC
2. Is this NOI being submitted in connection with a subdivision?² Yes No
3. Address of Applicant(s): 320 Governor Hunt Road
Vernon, VT 05354

4. Telephone Number: 802-258-5526
5. Fax: 802-258-5525
6. E-mail: ldewald@entergy.com
7. Project Name: Entergy VY Second Dry Fuel Storage Pad
8. Project Location Address: 320 Governor Hunt Road

9. Project Location Coordinates (center of project): Latitude: 42°46'47.05"
Longitude: 072°30'50.08"
10. Act 250 Permit Number (if applicable): N/A
11. Existing Stormwater Permit Number related to this project (if any): 4213-9015
12. Number of discharge points for the project: 1
13. Receiving Water(s): Connecticut River
14. If your project will discharge to a [stormwater impaired water](#) you will need to provide a sediment off-set for your project. Please contact the stormwater program to discuss this requirement.
15. Have or will you be submitting an application for coverage under a construction discharge permit also? Yes No Not Applicable
16. The following items **must** be included in your application materials for your application to be considered complete. **Be certain to use the most up-to-date forms by downloading them directly from our [webpage](#).** Submitted applications using out-of-date forms may be rejected.
 - Narrative
 - o Provide the information requested on the "Application Narrative Instructions"
 - Schedule A(s) and Standard Treatment Practices (STPs)/Credit worksheets
 - o Complete and attach a copy of Schedule A for each discharge point from the project.
 - o Complete and attach STP/Credit/Waiver worksheets for each STP/Credit/Waiver listed on the Schedule A for each discharge point, as well as any necessary WQ-/Re. calculation sheets.
 - Maps/Site Plans (11" x 17" preferred, all maps must have legend, scale bar and north arrow)

¹ If the applicant is a business, the business must be registered with the Secretary of State.

² Includes, but is not limited to, residential or commercial subdivisions, condominiums or industrial parks.

- Topographic map showing the location of the site, points of discharge, discharge points and receiving water(s).
 - Soils map (with HSGs), overlaid with site outline.
 - If existing impervious/stormwater treatment systems are present, include a site plan of existing conditions.
 - Proposed conditions site plan, with existing impervious, redeveloped impervious and new (expanded) impervious clearly identified in the legend, labeled discharge points, and labeled locations of STPs or Credits.
 - A detail sheet containing all applicable STPs for your project and demonstrating adherence to the design criteria for the STPs.
 - Credit design detail sheet (“typical”) when and where credits requiring specific design criteria will be used to meet standards.
- Runoff Modeling (where applicable)
- Pre-development/existing conditions sub-watershed delineations with labels and labeled points of interest/discharge points, overlaid over existing site plan with contours.
 - Pre-development/existing conditions model schematic.
 - Post-development/proposed conditions sub-watershed delineations with labels and labeled study points/discharge points, overlaid over proposed site plan with contours.
 - Post-development/proposed conditions model schematic.
 - Sub-watershed information (area and curve number assignment) for pre and post scenarios.
 - Time of concentration calculations for pre and post scenarios.
 - Runoff calculations for each element in the model.
 - Calculation time span adjusted to include entire volume of runoff.
 - Modified CN calculations if Water Quality (< 0.9”) storm was modeled.
- Additional Supporting Information
- Any information/calculations required by STP/Credit/Waiver worksheets

17. Include a check for the appropriate permit fees:

Administrative processing fee (\$120.00):	\$ <u>120.00</u>
<i>plus</i>	+
Application review fee ($\$430 \times 0.46$ impervious acre ³): (A minimum fee of \$220.00 applies)	\$ <u>197.80</u>

Total Permit Fees (Check# 89299):	\$ 340.00
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The minimum fee total is \$340.00.

Date of application: June 23, 2014

³ Class A waters: \$1400/impervious acre
Class B waters: \$430/impervious acre
Round impervious acreage listed on Schedule A’s to nearest 0.01 acre (e.g. 1.35 acres vs. 1.4 acres)

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18. DESIGNER CERTIFICATION: I hereby certify that the design-related information submitted with this application for coverage under General Permit 3-9015 was prepared under my direction or supervision and that the information is, in the exercise of my reasonable professional judgment, true, accurate and complete. I also hereby certify that the stormwater collection, treatment and control system design submitted with this application **complies with DEC's Stormwater Management Rule and the Vermont Stormwater Management Manual.**


Original Signature of Stormwater Designer

Civil Engineer
Title

SVE Associates - John E. Goodell, P.E.
Print or Type Name

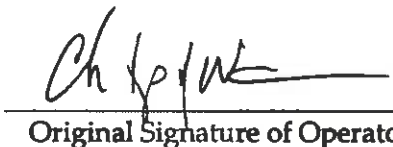
19. OWNER / OPERATOR CERTIFICATION: I hereby certify that I have read General Permit 3- 9015 and agree to abide by its terms.

20.

Christopher Wamser
Original Signature of Owner or Authorized Representative⁴

Site Vice President
Title

Print or Type Name


Original Signature of Operator (if any) or Authorized Representative

Site Vice President
Title

Christopher J. Wamser
Print or Type Name

Note: Submission of a Notice of Intent does not confer coverage under General Permit 3-9015. A permit must be deemed technically complete and the applicant must receive a signed authorization to discharge before the discharge of regulated stormwater from impervious surfaces requiring coverage is authorized.

⁴ If the applicant is an individual, but the NOI is being signed by an authorized representative, then a letter indicating that said person is the authorized representative must accompany this NOI. If the applicant is a business (registered with the Secretary of State) then the signature must be provided by one of the following i) the person listed as the registered agent with the Secretary of State; ii) an executive figure such as the president, chairperson or superintendent, or; iii) an individual whose status as an authorized representative is verified in writing by the registered agent or executive figure.

Project Narrative
for
Entergy Nuclear Vermont Yankee LLC Individual Stormwater Permit Application
for Stormwater Discharges to Non-Stormwater Impaired Waters From New
Development, Expansions and Redevelopment.

Energy Nuclear Vermont Yankee LLC is applying for coverage of stormwater discharges from new and redeveloped impervious surfaces at the VY Station site in Vernon, Vermont. What follows is a narrative description of the project based on the VT DEC guidance document for the narrative portion of an application.

1. Description as to why the proposed project requires permit coverage (i.e. under jurisdiction of stormwater management rules – Environmental Protection Rules, Chapter 18 or 22) :

This application includes the construction of a new, concrete, Dry Fuel Storage (DFS) pad and also the installation of a "site balancing project" to address impervious surfaces installed previously during a security walkway project that cannot be reasonably collected and treated. The DFS project will add 0.1 acres of new impervious area and include the redevelopment of approximately 0.14 acres of existing impervious surfaces. The security walkway project previously added approximately 0.24 acres of new impervious surface, of which 0.04 acres will be returned to a pervious (grassed) surface, 0.06 acres currently meet the Disconnection Credit requirements, and 0.14 acres will be addressed by the "site balancing" project shown on the project plans. The proposed "site balancing" project treats the runoff from 0.21 acres of existing impervious surface by creating 0.22 acres of gassed area that meets the Disconnection Credit requirements for the upslope area to be treated. As required by the Vermont Environmental Protection Rules, Chapter 18, Stormwater Management Rule, Section 18-302, the additional new impervious area requires a permit for stormwater discharges to waters of the state.

2. Detailed project description: Name of project, type of project (new, redevelopment, expansion), location, type of land use (e.g. residential, commercial, etc.), number of buildings, project access (from public road, private road, etc.), phasing (if applicable):

Entergy Nuclear Vermont Yankee, LLC plans to install a 93' x 106' concrete pad to serve as a second Dry Fuel Storage (DFS) pad for used nuclear fuel stored in special containers. This pad will be installed 30 ft to the west of the existing DFS pad that was built in 2006 (VT General Stormwater Permit No. 4213-9015).

Additionally, Entergy VY was previously required to install walking paths in certain locations to address security requirements. These walking paths resulted in 0.24 acres of new impervious area at the site. As shown on the project plans, 0.06 acres of these paths are treated directly by flow across grassed areas, however some of the paths installed were required to be located in areas where there is not a reasonable means of collecting and treating the stormwater runoff. To address these areas, a "site balancing" project has been developed in coordination with the VT DEC Stormwater Section. The project

consists of treating runoff from existing road areas near the PSB building by creating a grassed area of equivalent width and less than 5% slope (per Disconnection Credit criteria) such that the runoff flows over the grassed area. The 0.22 acre grassed area provides treatment for 0.21 acres of existing paved road and parking area and is used to more than offset the 0.14 acres of walking path area that cannot be reasonably collected and treated.

3. Please identify the receiving waters: Discharge points are located where stormwater runoff first enters a water of the State, hence receiving water. Waters of the State include, but are not limited to, streams (intermittent or perennial), rivers, lakes, ponds, and wetlands.:

The receiving water is the Connecticut River via an existing storm drainage pipe, located to the north of the proposed DFS pad location as shown on the project plans. As shown on the project plans this discharge point is labeled S/N 006.

4. Please describe the existing conditions: Land cover, existing impervious surface, current location of discharge points, drainage description, soils (description, hydrologic soil group classification), and slopes.:

The DFS pad project area is located inside the highly developed “protected area” of the plant in an area that includes sections of pavement, gravel, and small sections of grass. Currently, the area is used as a general storage area and also for a warehouse building that will be removed for this project. The existing drainage system for the area includes drainage manholes that discharge into an underground sand filter tank, and ultimately to the Connecticut River at discharge point S/N 006.

Discharge from the area of the proposed "Site Balancing" project flows across a grassed Disconnection Credit area. Larger storm events will flow over the grass area and ultimately into an existing stormdrain system and then directly to Discharge Point 006.

Discharge point S/N 006 is well stabilized with a stone lined outfall directly to the Connecticut River. The topography of the site area is very flat, as shown on the site plan.

Soils in the project area are shown as map unit 5B – Windsor loamy fine sand, 2 to 8 percent slopes, on the Soil Survey of Windham County. This soil type is described in the survey as being typically very deep and excessively well drained and is listed as hydrologic soil group A. Field observations support the information in the survey, although the area has been regraded such that typical slopes are less than 2%.

5. Existing Stormwater System (if any): A description of the existing stormwater system and its current condition, identification of any existing stormwater permits, identification of impervious areas treated by the existing stormwater system:

The existing stormwater system for the DFS project consists of a stormdrain collection system that discharges to an underground sandfilter tank which provides water quality volume (WQv) treatment before the runoff is discharged to the Connecticut River at S/N 006.

The only existing stormwater system related to the walkways and "Site Balancing" project is that of existing storm drainage manholes and collection piping located on the west side of the plant. This system discharges directly to discharge point S/N 006 as shown on the project plans.

6. Proposed Stormwater System: Please provide the following information for each discharge point for the proposed project:

➤ **Amount of impervious area (i.e. existing, redeveloped and new):**

There is only one discharge point (S/N 006) for this project, located northeast of the DFS project as shown on the project plans. The total impervious areas for this project are summarized as follows:

- The DFS pad project includes 0.10 acres of new impervious area and 0.14 acres of redeveloped impervious area.
- The walkways project includes 0.20 acres of new impervious area (once a 0.04 section of path is returned to a pervious surface), of which 0.06 acres are treated directly by Disconnection Credit and 0.14 acres have compensating treatment provided by a "Site Balancing" project.

➤ **Receiving Water Identification :**

Connecticut River

➤ **Cold/Warm Fish Habitat Designation for Receiving Water (Appendix A of Vermont Water Quality Standards):**

Cold Water Fish Habitat

➤ **Location of discharge point:**

The proposed discharge point is the Connecticut River via existing drainage piping, labeled as S/N 006 on the project plans.

➤ ***Demonstration of compliance with each of the 5 unified sizing criteria in the 2002 VSWMM (include the Standard Treatment Practice(s), Credits and/or Waivers):***

Water Quality Treatment Standard

The Water Quality Treatment Standard for this site has been met through treatment in an underground sand filter tank and/or by flow across grassed areas in accordance with Disconnection Credit requirements.

Groundwater Recharge Treatment Standard

The DFS project has been designated as a “Hotspot” as defined in the Vermont Stormwater Treatment Standards Manual, Volume I, Section 2.6. Runoff from a Stormwater Hotspot is not permitted to be infiltrated into the ground, so there is no Groundwater Recharge requirement for DFS project.

Groundwater Recharge for 0.06 acres of walking path that will be treated directly by flow over grassed area in accordance with Disconnection Credit requirements. Similarly, Groundwater Recharge for the "Site Balancing" project is also accomplished by flow across grassed area in accordance Disconnection Credit requirements.

Channel Protection Standard

The Channel Protection Treatment Standard is not applicable to this project since the discharge is directly to the Connecticut River (drainage area >> 10 square miles).

Overbank Flood Protection Standard (Qp10)

The Overbank Flood Treatment Standard is not applicable to this project since the discharge is directly to the Connecticut River (drainage area >> 10 square miles).

Extreme Flood Protection Standard (Qp100)

The Extreme Flood Treatment Standard is not applicable to this project since the discharge is directly to the Connecticut River (drainage area >> 10 square miles).

➤ ***Manner of Discharge: Detailed description of where runoff originates (e.g. roof, road, parking lot, etc.), conveyance within the project, treatment (e.g. wet pond, grass treatment channel) and receiving water***

The proposed DFS pad is sloped very slightly to the east such that runoff flows across the pad and then into a new drain manhole located between the existing and proposed DFS pads. The runoff then travels through another new manhole and then 5 existing manholes and ultimately into the existing sand filter tank. This tank was originally designed with some excess capacity for future expansions (such as this project) and will accept the runoff from the new DFS pad with relatively minor modifications. Runoff passes through the existing sand filter tank and into existing storm drainage piping that discharges to the Connecticut River at Discharge Point S/N 006 shown on the project plans.

Runoff from the walkways that are treated directly by Disconnection Credit flows over grassed areas and then down the bank to the Connecticut River at or close to the labeled discharge point S/N 006. Runoff from the "Site Balancing" project flows across a grass disconnection credit area where small storms will tend to soak into the grassed area. Larger storm events will flow across the grassed area and into an existing manhole in the paved area on the west side of the plant, the runoff then flows in the existing drainage piping to discharge point S/N 006 as shown the project plans.

7. Please include any additional information that may demonstrate how the proposed stormwater management system complies with the 2002 VSWMM.

The paragraphs above detail how compliance with the VSWMM has been achieved. This project utilizes the "Site Balancing" procedure which has been applied to this project in coordination with the VT DEC Stormwater Section. The specific area of the "Site Balancing" project and the new impervious areas that cannot otherwise be reasonably treated were viewed and discussed with representatives of the VT DEC Stormwater Section during a site visit on September 13, 2012.