



**Entergy Nuclear Operations, Inc.**  
**Palisades Nuclear Plant**  
27780 Blue Star Memorial Highway  
Covert, MI 49043  
Tel 269 764 2000

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**Barbara E. Dotson**  
Regulatory Assurance Manager (Acting)

PNP 2021-022

April 27, 2021

ATTN: Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**Subject: 2020 Annual Non-Radiological Environmental Operating Report**

Palisades Nuclear Plant  
Docket 50-255  
Renewed Facility Operating License No. DPR-20

Entergy Nuclear Operations, Inc (ENO) is providing the Palisades Nuclear Plant (PNP) Annual Non-Radiological Environmental Operating Report for 2020. This report was prepared in accordance with the PNP Renewed Facility Operating License, Appendix B, section 5.4.1. The attached report describes the implementation of the Environmental Protection Plan from January 1, 2020, through December 31, 2020.

This letter contains no new commitments and no revisions to existing commitments.

Respectfully,

A handwritten signature in black ink that reads "Barbara E. Dotson".

BED/mrp

**Attachment: 1. 2020 Annual Non-Radiological Environmental Operating Report**  
**2. Herbicide and Pesticide Treatments**

cc: Administrator, Region III, USNRC  
Project Manager, Palisades, USNRC  
Resident Inspector, Palisades, USNRC

## ATTACHMENT 1

### 2020 ANNUAL NON-RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

#### 1.0 BACKGROUND

Appendix B of the Renewed Facility Operating License for the Palisades Nuclear Plant (PNP) requires the submittal of an annual environmental operating report to the Nuclear Regulatory Commission (NRC), describing the implementation of the Environmental Protection Plan (EPP) during the previous year. The reporting period is January 1, 2020, through December 31, 2020.

The PNP operated for 7,557.05 hours and produced a net total of 5,994,427 MWh during 2020. This represents 85% of the net demonstrated capacity of the design electric rating of 805 MWe.

#### 2.0 ENVIRONMENTAL IMPACT EVALUATIONS

During 2020, there were two projects that were reviewed in the Environmental Review process in accordance with EN-EV-115. The Engineering Changes are as follows:

Engineering Change (EC), EC-85392 was performed to replace M-8, plant heating boiler. The fuel oil burner for M-8 was aging, was slightly oversized for the required heating loads, and a higher turn down ratio was desired. The new burner is more efficient than the existing burner and while the Michigan Department of Environmental Quality (MDEQ) was notified of the upgrades, a permit was not required. The EC and the work were completed in 2020.

Engineering Change, EC-85640 was performed for temporary cooling for the main transformer by supplying cold air to the back of the transformer and removing heat and liberating it to the surrounding air. The modification consisted of two 100-ton chillers, two 120-ton air handling units, two 300-gpm chilled water pumps, two 300 kW diesel generators, two 1200A or 800A distribution panels, and associated feeder cables. Run times, percent load and fuel consumption were inventoried and reported to Department of Environment, Great Lakes and Energy (EGLE). The EC and the work were completed in 2020.

There were no additional changes, tests, or experiments that involved un-reviewed environmental questions or EPP changes.

#### 3.0 ADDITIONAL ACTIVITIES AUTHORIZED UNDER NPDES

In accordance with the Department of EGLE requirements, a National Pollutant Discharge Elimination System (NPDES) permit application renewal was applied for and verified as being received by the State of Michigan prior to required due date. PNP's new NPDES permit has not been received from the State of Michigan at this time; however, by submitting by the required due date, in accordance with the process, PNP is still covered under the old NPDES permit. No changes at this time are expected to the permit. No additional activities were authorized under the NPDES permit.

The Air Operating Permit renewal application package was submitted and received by the State of Michigan prior to the required due date in accordance with Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A.451 of 1994, and the federal Clean Air Act of 1990. PNP has received the new approved Air Operating Permit.

#### **4.0 UNUSUAL ENVIRONMENTAL EVENTS**

No unusual environmental events occurred during 2020.

#### **5.0 ENVIRONMENTAL MONITORING**

TruGreen and the Buildings and Grounds work group treated areas of the property for vegetation management during 2020. Rose Pest Solutions treated areas of the property for tick and pest control. Herbicides were not applied to the transmission line exit corridor in 2020. The application of herbicides and pesticides is documented in Attachment 2.

#### **6.0 NON-ROUTINE REPORTS**

In September 2020, PNP had one reportable spill when the operations group noted that the condensate storage tank (T-2) level was unexplainably lowering at approximately 7 gpm during outage activities. The leakage was stopped through the closure of isolation valve MV-CD146 (T-2 condensate return from boilers & blowdown demineralizers). It was determined that the reportable spill threshold for hydrazine was exceeded based on concentrations of T-2 and the approximate volume lost prior to isolation of the leak. Calculations indicate approximately 2.7 pounds of hydrazine were spilled or released to the ground. The reportable quantity (RQ) for hydrazine is one pound. Therefore, because this leak was to the ground/groundwater and not captured by any plant systems, it was determined that notification to an outside agency was required. The required initial notification to the State of Michigan was performed by the Site Environmental Supervisor. Additional details are captured in site corrective action documentation.

## ATTACHMENT 2

### HERBICIDE AND PESTICIDE TREATMENTS

**Company:** TruGreen  
9077 Portage Industrial  
Portage, Michigan 49024-9935

**Date & Treatment Amounts:**

June 03, 2020	(495 pounds applied)
June 03, 2020	(0.77 gallons applied)
June 08, 2020	(6.51 gallons applied)
July 14, 2020	(495 pounds applied)
July 14, 2020	(1.54 gallons applied)
July 30, 2020	(2.96 gallons applied)
August 27, 2020	(248 pounds applied)
August 27, 2020	(0.79 gallons applied)
October 02, 2020	(248 pounds applied)
October 02, 2020	(0.06 gallons applied)
October 28, 2020	(208 pounds applied)
October 28, 2020	(0.03 gallons applied)
November 25, 2020	(495 pounds applied)

\*Liquid volumes are the active chemicals used and do not include the dilution water.

**Commercial Names of Products in Solution:** TruPower® 3, Oust XP, Tri-Power, Sureguard® SC, Finale, Drive XLR8

**Chemical Name of Products:**

**TruPower® 3-** Triisopropanolamine Salt of 2, 4-Dichlorophenoxyacetic Acid, Dimethylamine Salt of (+)-R-2-(2-Methyl-4-Chlorophenoxy), Propionic acid, Dicamba Acid

**FINALE-** (GLUFOSINATE-AMMONIUM)

**SUREGUARD SC HERBICIDE-** (FLUMIOXAZIN)

**DRIVE XLR8-** (QUINCLORAC)

**Tripower:** Dimethylamine salt of 2- methyl 4-chlorophenoxy acid, Dimethylamine salt of (+)-R-2-(2-methyl-4-chlorophenoxy)propionic acid, Dimethylamine salt of Dicamba (3,6-Dichloro-o-anisic acid)

**Oust XP-** Sulfometuron methyl {Methyl-2-[[[(4,6-dimethyl-2-pyrimidinyl) amino] carbonyl] amino] benzoate }

**Concentration of Active Ingredient in Field Use Mix:**

**One solution was mixed together that contained the following:**  
52 oz. per 11 gallons per acre (TruPower® 3) applied to 1.9 acres

**Diluting Substance:** Water for wet applications  
No dilutions for dry applications

**Rate of Application:**

**Liquid:** 11 gallons per acre liquid application (TruPower® 3, Tripower, Drive XLR8)  
88 gallons per acre liquid application (Finale, Sureguard® SC, Oust XP, TruPower® 3)  
**Dry:** 3 lbs. per 1000 ft<sup>2</sup> applied (fertilizer)

**Total Amount Used:** 12.66 Gallons total volume used for liquid treatment \*\*\*  
2189 Pounds total volume used for dry treatment

\*\*\*Liquid volumes are the active chemicals used and do not include the dilution water.

**Method of Application:** Hand sprayer for liquids  
Broadcast spreader for dry application

**Frequency of Application:** Throughout the year as needed

**Location:** Along and near roadways, fence lines, walkways, parking lots, containment areas, substations, cooling towers, protected area, and microwave zones.

**Purpose of Treatment:** Fertilize, and control of weed species, crabgrass, nuisance vegetation, broadleaf vegetation

**Company:** Entergy – Palisades  
Building and Grounds  
27780 Blue Star Memorial Highway  
Covert, Michigan 49043

<b>Date of Treatment:</b> May 15, 2020	(1 gallon applied)
June 23, 2020	(1 gallon applied)
September 10, 2020	(1 gallon applied)
September 20, 2020	(1 gallon applied)

**Commercial Names of Products in Solution:** Roundup® Ready-To-Use Extended Control Weed & Grass Killer Plus Weed Preventer II

**Chemical Names of Products:**

**Roundup® Ready-To-Use Extended Control Weed & Grass Killer Plus Weed Preventer II -**  
Nonanoic and related fatty acids; {Pelargonic and related fatty acids}  
Isopropylamine salt of N-(phosphonomethyl)glycine; {Isopropylamine salt of glyphosate}  
Ammonium salt of 2-[4,5-dihydro-4-methyl-4-(1-methyl)-5-oxo-1H-imidazol-2-yl]-5-methyl-3-pyridinecarboxylic acid; {Ammonium salt of imazapic}

**Concentration of Active Ingredient in Field Use Mix:**

**One solution was mixed together that contained the following:**  
1 gallon of (Roundup® Ready-To-Use Extended Control Weed & Grass Killer Plus Weed Preventer II)  
applied to 235 square feet

**Diluting Substance:** No dilution is performed as product is purchased in ready to use concentrations

**Rate of Application:** 1 gallon per 235 square feet liquid application (Roundup® Ready-To-Use Extended Control Weed & Grass Killer Plus Weed Preventer II)

**Total Amount Used:** 4 Gallons total volume used for liquid treatment

**Method of Application:** Hand sprayer for liquids

**Frequency of Application:** Throughout the year spot treatments between TruGreen applications as needed

**Location:** Along and near roadways, fence lines, walkways, parking lots, containment areas, substations, cooling towers, protected area, and microwave zones.

**Purpose of Treatment:** Fertilizer, control of weed species, crabgrass, nuisance vegetation, nuisance broadleaf vegetation

**Company: Rose Pest Solutions**  
2714 South 11th St. Ste B  
Niles, Michigan 49120-4420

<b>Date of Treatment:</b> Jan 13, 2020	(340 grams applied)
Feb 10, 2020	(100 grams applied)
Feb 24, 2020	(160 grams applied)
Mar 9, 2020	(140 grams applied)
April 2, 2020	(4 gallons applied)
April 15, 2020	(520 grams applied)
April 27, 2020	(540 grams applied)
May 4, 2020	(4 gallons applied)
May 11, 2020	(360 grams applied)
May 26, 2020	(100 grams applied)
May 26, 2020	(1 gallon applied)
June 02, 2020	(6 gallons applied)
June 08, 2020	(320 grams applied)
June 08, 2020	(1 gallon applied)
June 11, 2020	(4 gallons applied)
June 22, 2020	(300 grams applied)
June 22, 2020	(2 gallons applied)
July 13, 2020	(400 grams applied)
July 13, 2020	(3.75 gallons applied)
July 27, 2020	(160 grams applied)
July 27, 2020	(5 gallons applied)
Aug 04, 2020	(4 gallons applied)
Aug 10, 2020	(240 grams applied)
Aug 10, 2020	(0.25 gallons applied)
Aug 21, 2020	(5 gallons applied)
Aug 24, 2020	(260 grams applied)
Aug 27, 2020	(2.5 gallons applied)
Sept. 14, 2020	(580 grams applied)
Sept 14, 2020	(4 gallons applied)
Sept. 28, 2020	(380 grams applied)
Sept. 28, 2020	(4 gallons applied)
Oct. 09, 2020	(4 gallons applied)
Oct. 12, 2020	(60 grams applied)
Oct. 26, 2020	(140 grams applied)
Oct. 26, 2020	(4 gallons applied)
Nov. 09, 2020	(180 grams applied)
Nov. 23, 2020	(320 grams applied)
Dec. 14, 2020	(580 grams applied)
Dec. 28, 2020	(280 grams applied)

**Commercial Names of Products in Solution: Final All-Weather Blox and Talstar Pro**

**Chemical Names of Products:**

**Final AW Blox - Brodifacoum** [3-[3-(4'-Bromo-[1,1'-biphenyl]-4-yl)-1,2,3,4-tetrahydro-1-naphthalenyl]-4-hydroxy-2H-1-benzopyran-2-one]

**Talstar Pro – Bifenthrin** (2-methyl [1,1'-biphenyl]-3-yl)methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate

**Concentration of Active Ingredient in Field Use Mix:**

**One solution was mixed together that contained the following:**

1.00 fluid oz. of the chemicals per gallon of water

**Diluting Substance:** No dilutions for dry applications

**Total Amount Used (active ingredient amounts):**

6460 Grams total volume used for dry treatment

58.5 Gallons total volume used for liquid treatment

**Method of Application:** Bait Station Installation for dry application

Hand sprayer for liquids

**Frequency of Application:** Throughout the year as needed

**Location:** Along and near roadways, fence lines, walkways, and the protected area.

**Purpose of Treatment:** Tick, Mice and Roach control