

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
FACTSHEET

(Pursuant to NAC 445A.236)

Permittee Name: NV Energy
North Valmy Generating Station
P.O. Box 10100
Reno, NV 89520

Permit Number: NEV96015

Location: North Valmy Generating Station
Interstate I-80 Stonehouse Exit 212
Valmy (Humboldt County), NV 89438

Evaporation Ponds A-F (Outfalls 001 – 006)
1st Pond – Pond A:
Latitude: 40° 53' 0" N, Longitude: 117° 9' 23" W
Township 35N, Range 43E, Section 29

General: NV Energy (formerly Sierra Pacific Power Company) has been permitted by the Bureau of Water Pollution Control (BWPC) under this discharge permit since 1998. The North Valmy Station commenced construction in 1979 and currently generates 500 Mega Watts (MW) of Power by operating two coal-fired generating units. Wastewater is discharged into Evaporation Ponds A-F (1-6), which are inter-connected for series flow. There is no infiltration basin for these ponds, and no discharge of process wastewater to groundwater occurs. Cooling tower blow-down and effluent from Ponds D, E, and F is allowed for dust control on plant grounds. Process Wastewater discharged into the evaporation ponds include: cooling tower blow-down, boiler blow-down, process sumps and floor drains, water treatment plant process wastewater, clarifier effluent from the fly ash hopper dewatering system, plant storm water runoff, truck wash pad wastewater, and sanitary wastewater, except for effluent from the switchyard septic system. The facility had decommissioned its domestic wastewater package treatment plant in 1982.

The ponds are each 25 acres (area) × 8 ft. (depth), (A-E) and 33 ac. × 12 ft. (F), respectively. Liner materials include single-lined chlorinated polyethylene – 30 mils CPE (A), single-lined high density polyethylene – 60 mils HDPE (D & E), and double-lined 60 mils HDPE (B, C & F). New pond construction or relining adopts the BWPC Water Technical Sheet (WTS)-37 double-liner and leak-detection standard. The most recent pond to be double-lined was Pond C in 2010. The last temporary discharge permit issued to this facility required that no additional wastewater discharge to Pond A occur until it is reconstructed with a double liner and leak detection sump. Currently Pond A is offline, and its wastewater is being evaporated in preparation for double-lining of the basin in 2011. The facility conducts an engineering evaluation of its pond liners to determine a replacement schedule each permit term. Ponds D and E have been recently evaluated and determined that the existing HDPE liners have acceptable integrity. Ponds D and E will be double-lined in the future as funding becomes available.

Bureau of Corrective Actions Sites: There is no Bureau of Corrective Actions (BCA) remediation site, which is located within a one-mile radius of the North Valmy Generating Station.

Wellhead Protection Area: The North Valmy Generating Station is located outside the 6,000 ft. Drinking Water Protection Area No. 4 for all supply wells. The facility's nearest Non-Transient Non-Community supply wells are located three miles south-southwest of the ponds.

Receiving Water Characteristics: Depth to groundwater ranges from 30 (perched aquifer) to 80 ft. (confined aquifer), respectively. The Humboldt River is located 3½ miles west and down-gradient of the facility. Former dewatering at a nearby mine (Lone Tree) has impacted the groundwater levels in two of the three down-gradient monitoring wells, which are currently reported dry (no sample available). MW-3 is presently reported with sampling available. Because of the two existing dry monitoring wells (MW-1 and MW-2), the facility is installing three new monitoring wells, two down-gradient wells, MW-1R and MW-2R, and one up-gradient well, MW-4R. For groundwater monitoring, the facility will therefore report a total of three down-gradient (MW-1R, MW-2R, MW-3) and one up-gradient (MW-4R) monitoring wells.

Operation & Maintenance (O&M) Manual: The O&M Manual is required for revision in the Schedule of Compliance (SOC). Changes in the facility since the last permit renewal includes the construction of new Pond F, and the completion of relining Ponds B and C. The most current O&M Manual was approved by the Division in 2010.

Flow: NV Energy was permitted to discharge up to 1.50 MGD (30-day average) and 3.00 MGD (daily maximum) to all six ponds under temporary discharge permit TNEV2008448. These same flow limits were recently renewed on September 3, 2010 under temporary discharge permit TNEV2011318. The temporary permit requires monthly flow reporting and for November 2010, NV Energy reported a monthly average discharge flow of 0.48 MGD into the evaporation ponds. For the permit renewal of NEV96015, the flow limits of 1.5 / 3.0 MGD will be in effect. NV Energy cycles the cooling water through the cooling towers up to 8 times prior to discharge in order to maximize water usage and to minimize the introduction of new supply water to maximize water conservation.

DMR Analysis: Selected parameters from the DMR data are noted below (quarterly sampling frequency):

1. pH: Pond pH levels averaged 9.1 Standard Units (SU), and this pH level is considered alkaline due to the wastewater hardness (e.g., calcium and magnesium). With respect to effluent and pond pH levels, the Permittee remains in substantial compliance with its permit conditions. In the past seven years, two separate pH violations have been reported that occurred approximately four years apart from each other. Because the pH violations were exceptions, were immediately mitigated and had no negative environmental impact due to the line status of the ponds, neither pH violation rose to the level of an enforcement action. The pH violations have been recorded and remain part of the facility's compliance history.
2. TDS: Pond TDS levels averaged 32,000 mg/l, and the operating TDS level ranged from 10,000 to 70,000 mg/l.

3. Fecal Coliform: Pond fecal coliform levels generally were below the non-detection level (< 2 CFU/100 ml) and always below 100 CFU/100 ml. Reuse (dust control) must meet the limit of 200/400 CFU/100 ml. For reuse, the facility fills water trucks from Ponds D, E, and F, which are the three furthest, down-gradient ponds from the wastewater inlet at Pond A. The amount of domestic (sanitary) wastewater discharged into these ponds is estimated by NDEP to be $\leq 1,000$ GPD or < 0.5% of the total plant flow (the sanitary collection system services a workforce of approximately 50 employees and contractors).
4. Oil and Grease: O&G levels are generally below detection limits (< 5 mg/l) and managed by Best Management Practices including use of Oil-Water Separation (OWS) on floor drains and plant sumps where oil and grease contaminants can enter, e.g., floor washing.
5. TPH: Monitoring data indicates non-detection levels (< 0.5 mg/l) of petroleum hydrocarbons.
6. BOD₅: Pond levels averaged < 3 mg/l and were all under 10 mg/l over the past five-year monitoring period. To allow reuse from Ponds D, E, and F, the BOD₅ and TSS levels in the reclaimed water has to be maintained within 30/45 mg/l in accordance with NAC 445A.275.
7. TSS: Suspended solids levels in the ponds averaged 63 mg/l but individually spiked up to levels of 250 mg/l. To allow reuse from Ponds D, E, and F, the BOD₅ and TSS levels in the reclaimed water is to be maintained within 30/45 mg/l in accordance with NAC 445A.275.

Rational for Permit Requirements:

1. NDEP Profile 1, Fecal Coliform, BOD₅, TSS, Oil and Grease, and TPH parameters will be sampled in each outfall on a quarterly basis. Since these ponds receive domestic wastewater, dust abatement reuse must meet the specified limits for fecal coliform, BOD₅ and TSS.
2. Total pond inflow (IE: Sum of the flows into Outfalls 001 through 006) is reported using flow meter and totalizer data and limited to 1.5 MGD on a 30-day average basis (daily maximum flow limit is 3.0 MGD). The dust abatement flow (Outfall 007) is tracked via totalizer and load count reporting.
3. A minimum freeboard level of 2 feet is required in all six ponds.
4. The requested primary liner leak detection rate from NV Energy is 300 gallons/day-acre (300 gpd/acre), and this value conforms to the BWPC guidance (WTS-37) value of 500 gallons/day-acre as an allowable limit for a double-lined wastewater impoundment. If evidence of deterioration or damage to a liner is noted, or excessive primary liner leakage rate greater than the 300 gpd/acre permit limit is observed in the ponds furnished with a leak detection system, initial notification of the excessive primary liner leakage rate is required to the Division within 24 hours of discovery. Additionally, the Division shall be notified in writing within one week of excessive leakage rate confirmation and a corrective actions plan shall be submitted to the Division within one month's time, which outlines the plan for liner repair or replacement. Presently, Ponds B, C and F are double-lined and furnished with leak detection sumps.

5. Groundwater monitoring wells are sampled quarterly using a discrete basis and reported (Monitor and Report basis except Total Nitrogen) for Groundwater Elevation, Depth to Groundwater, TDS, Chloride, Nitrate as Nitrogen (M&R) and Total Nitrogen as Nitrogen (10 mg/l). A NDEP Profile 1 analysis on all monitoring wells shall be performed annually in the fourth quarter. For the permit renewal, NV Energy will report data from three down-gradient and one up-gradient monitoring wells.

TABLE 1: DISCHARGE LIMITATIONS

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	30-Day Average	Daily Maximum	Sample Location	Measurement Frequency	Sample Type
Total Pond Inflow, MGD (Million Gallons per Day)	1.5	3.0	Σ 001 through 006 (Ponds A - F)	Continuous	Meter/ Totalizer
Dust Abatement Reuse Flow, MGD (Million Gallons per Day)	M&R	M&R	007	Continuous and/or Logbook	Flow Meter and/or Load Count
NDEP Profile 1, mg/l ⁽²⁾	M&R		001 – 007	Quarterly	Discrete
Fecal Coliform, CFU/100 ml or MPN	M&R		001 – 006	Quarterly	Discrete
Fecal Coliform, CFU/100 ml or MPN	200	400	007	Quarterly	Discrete
BOD ₅ , mg/l	M&R		001 – 006	Quarterly	Discrete
BOD ₅ , mg/l	30	45	007	Quarterly	Discrete
TSS, mg/l	M&R		001 – 006	Quarterly	Discrete
TSS, mg/l	30	45	007	Quarterly	Discrete
pH, Standard Units (S.U.)	6.0 to 10.0		001 – 007	Quarterly	Discrete
Oil and Grease, mg/l	M&R		001 – 007	Quarterly	Discrete
Full-Range TPH, mg/l (Purge & Extract)	M&R		001 – 007	Quarterly	Discrete
Pond Freeboard, ft.	≥ 2.0		001 – 006	Monthly	Field Measurement
Primary Liner Leakage Rate (gal/day-acre)	≤ 300.0 ⁽¹⁾		Leak Detection Sumps	Monthly	Field Measurement

1. For all double lined ponds, if the limit is exceeded, the permittee must comply with Section I.A.20.
2. Include all NDEP Profile 1 parameters except for WAD Cyanide.

Table 2: Groundwater Monitoring (MW-1R, MW-2R, MW-3, and MW-4R)

PARAMETER	GROUNDWATER LIMITATIONS		MONITORING REQUIREMENTS	
	Sample Location	Daily Maximum	Daily Maximum	Sample Type
Depth to Groundwater, ft.	Each Well	M&R	Quarterly	Field Measurement
Groundwater Elevation, ft. above sea level	Each Well	M&R	Quarterly	Field Measurement
TDS, mg/L	Each Well	M&R	Quarterly	Discrete
Chlorides, mg/L	Each Well	M&R	Quarterly	Discrete
Nitrate as N, mg/L	Each Well	M&R	Quarterly	Discrete
Total Nitrogen as N, mg/L	Each Well	10.0	Quarterly	Discrete
NDEP Profile 1, mg/l	Each Well	M&R	Annually (4 th Quarter)	Discrete

Schedule of Compliance (SOC): (all compliance deliverables shall be addressed to the attention of the Compliance Coordinator, Bureau of Water Pollution Control):

- Within ninety (90) days of the permit renewal date (**by May 2, 2011**), the Permittee shall provide an updated Operations & Maintenance (O&M) Manual, prepared in accordance with WTS-2: *Minimum Information Required for an Operation and Maintenance Manual for a Wastewater Treatment Plant*.
- Within six months (180) days of the permit renewal date (**by July 31, 2011**), the Permittee shall submit plans and specifications to the Division for the installation of new monitoring wells (MW-1R, MW-2R, and MW-4R). The monitoring wells shall be designed in accordance with the NDEP Water Technical Sheet No. WTS-4: *Guidance Document for Design of Monitoring Wells*.
- Upon completion of the monitoring wells installation MW-1R, MW-2R, and MW-4R, groundwater quality samples shall be taken by the Permittee as specified in Section I.A.2 Table 2.

Procedures for Public Comment: The Notice of the Division's intent to issue this discharge permit, subject to the conditions contained within the permit was sent to the Humboldt Sun and Reno Gazette-Journal newspapers for publication. The notice was also electronically mailed to all interested persons requesting listing on our public notification mailing list. Persons wishing to comment on the proposed permit were able to do so in writing within a period of thirty (30)

calendar days of the date of publication of the public notice in the newspaper. The deadline date and time by which all comments were to be submitted (via postmarked mail or time-stamped faxes, e-mails, or hand-delivered items) to the Division was Monday, June 7, 2010, 5:00 P.M. PST.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons.

The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination: The Division has made the determination to issue the proposed water pollution control discharge permit for a period of five (5) years.

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Date Revised: January 13, 2011