

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
FACT SHEET
(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) since 1998. The North Valmy Station constructed in 1979 and generates 500 MW with two coal-fired generating units. Wastewater is discharged into Evaporation Ponds A-F, which are inter-connected for series flow-through. Cooling tower blow-down and effluent from Ponds D, E, and F is allowed for dust control on plant grounds. Wastewater discharged into these ponds include: cooling tower blow-down, boiler blow-down, process sumps and floor drains, water treatment plant wastewater, fly ash hopper dewatering, plant storm water runoff, truck wash pad wastewater, and sanitary wastewater, except for the switchyard septic system. The facility decommissioned its domestic wastewater package treatment plant in 1982. The ponds are each 25 ac. × 8 ft. (A-E) and 33 ac. × 12 ft. (F), respectively. Liner materials include single-lined chlorinated polyethylene – 30 mils CPE (A & C), single-lined high density polyethylene – 60 mils HDPE (D & E), and double-lined 60 mils HDPE (B & F). New pond construction or relining adopts the WTS-37 double-liner and leak-detection standard, which was last used in relining Pond B (2009) and constructing Pond F (2007). In Dec. 2009, Pond C was taken out of service for eventual relining and leak detection system installation. The facility conducts an engineering evaluation of its pond liners to determine a replacement schedule each permit renewal term. Sludge buildup, when removed, is disposed of in the facility's fly ash landfills.

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. Dewatering at a nearby mine (Lone Tree) has impacted two of the three down-gradient monitoring wells (dry). For groundwater monitoring, the facility will report three down-gradient (MW-1R, MW-4, MW-5) and one representative up-gradient (background) monitoring wells.

O&M Manual: The O&M Manual is requested for revision in the SOC. Changes noted by NDEP since the last renewal includes new Pond F, relined Pond B and work on relining Pond C.

Flow: Recent data indicates 0.64 MGD (total), including dust control. The application indicates 3.0 MGD evaporative capacity in the ponds but requests a lower flow limit of 1.5 MGD.

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 wastewater hardness (calcium and magnesium).
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. To meet the reuse limit of 200/400 CFU/100 ml, the facility proposes discharge from Ponds D, E, and F, which are the three furthest, down-gradient ponds from the wastewater inlet. The amount of domestic (sanitary) wastewater discharged into these ponds is estimated by NDEP to be ≤ 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.
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 TSS (and BOD₅) levels in the reclaimed water has to be maintained within 30/45 mg/l in accordance with NAC 445A.275.

Rational for Permit Requirements:

1. Profile 1 (omit Total Phosphorus and WAD Cyanide), 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 Σ of flow 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 Monitor and Report). The dust abatement flow (Outfall 007) is tracked via totalizer and load count reporting.
3. A freeboard of 2 feet is required in all six ponds.
4. The leak detection accumulation rates in all double-lined ponds (B, F and C (under construction) are limited ≤ 50.0 gal/day-acre and monitored monthly.
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 Profile 1 Analysis on all monitoring wells (omit Total Phosphorus and WAD Cyanide) shall be performed annually in the fourth quarter.

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	M&R	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	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
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
Leak Detection Sump (fluid accumulation rate), gal/day-acre	≤ 50.0		All double-lined ponds	Monthly	Field Measurement

1. Include all NDEP Profile 1 parameters except for Phosphorus, Total and WAD Cyanide.
2. Outfalls 001 through 006 denote Ponds A through F, respectively.
3. Outfall 007 denotes cooling tower blow-down and effluent from Ponds D, E and F for dust control.
4. Double-lined ponds include B (002), C – Under Construction (003), and F (006). Any additional evaporation ponds that will be re-lined or newly constructed during this permit's term shall be added to this list.

Table 2: Groundwater Monitoring (MW-1R, MW-4, MW-5, and one up-gradient well)

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

1. Include all NDEP Profile 1 parameters except for Phosphorus, Total and WAD Cyanide.

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, 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*.

Procedures for Public Comment: The Notice of the Division's intent to issue this discharge permit, subject to the conditions contained within the permit is being sent to the **Humboldt Sun** and **Reno Gazette-Journal** newspapers for publication. The notice is also being electronically mailed to all interested persons requesting listing on our public notification mailing list. Anyone wishing to comment on the proposed permit can 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 comment period can be extended at the discretion of the Administrator. The deadline date and time by which all comments are to be submitted (via postmarked mail or time-stamped faxes, e-mails, or hand-delivered items) to the Division is **Monday, June 7, 2010, by 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 tentative determination to issue the proposed water pollution control discharge permit for a period of five (5) years.

Prepared by: Mark A. Kaminski, P.E., Staff Engineer III
Bureau of Water Pollution Control

Date: May 3, 2010