FACTSHEET
(pursuant to NAC 445A.236)

Permittee Name: NEVADA POWER CO DBA NV ENERGY
6226 W SAHARA AVE, MS 30
LAS VEGAS, NV - 89119

Permit Number: NS2003501

Location: SILVERHAWK GENERATING STATION, CLARK
15111 APEX POWER PARKWAY M/S 49, LAS VEGAS, NV - 89165
LATITUDE: 36.410694, LONGITUDE: -114.960750
TOWNSHIP: T18S, RANGE: R63E, SECTION: S5

Outfall / Well Num	Outfall / Well Name	Location Type	Well Log Num	Outfall City	Outfall State	Outfall Zip	Outfall County	Latitude	Longitude	Receiving Water
001	EVAPORATION POND A	External Outfall		NORTH LAS VEGAS	NV	89124	CLARK	36.409722	-114.960556	WATERS OF THE STATE OF NEVADA
002	EVAPORATION POND B	External Outfall	86906	NORTH LAS VEGAS	NV	89124	CLARK	36.409722	-114.960556	WATERS OF THE STATE OF NEVADA
003	BRINE CONCENTRATOR SURGE POND	External Outfall	85526	NORTH LAS VEGAS	NV	89124	CLARK	36.409722	-114.960556	WATERS OF THE STATE OF NEVADA

General:

The Permittee, NV Energy, has applied for renewal of groundwater discharge permit NS2003501, formerly NEV2003501. NV Energy operates the Silverhawk Generating Station (Silverhawk) located approximately 20 miles northeast of Las Vegas, in the Apex Industrial Park. The facility address is 15111 Apex Power Parkway, North Las Vegas, Clark County, Nevada. Access to the facility is via US-93/Great Basin Hwy. Silverhawk is a 580 megawatt natural gas-fired combined cycle power plant.

Major water uses at Silverhawk are for boiler makeup, cooling water for the auxiliary cooling tower and makeup water for evaporative coolers used to pre-cool the air entering the gas turbines. Raw water (groundwater) is supplied to the facility via an on-site well. Recycled water undergoes enhanced recovery water treatment with chemicals to control biological growth, scaling and corrosion during use in the cooling towers, inlet chillers and evaporative cooler. Some of this water is demineralized by a reverse osmosis treatment system prior to use as boiler feed water for the steam turbines and heat recovery steam generators (HSRGs). A mixture of well water and demineralized water is used as makeup water to the cooling tower, inlet chillers and evaporative cooler.

No exceedences to the current permit conditions have been reported. The facility is considered to be in substantial compliance with the current permit conditions.

Discharge Characteristics:

Waste streams generated at the facility are derived from the auxiliary cooling tower, evaporative coolers and small quantities of reject water from the brine concentrator. The water treatment systems are designed

to allow the water to be recycled approximately 7 times for plant reuse. Salinity in the cooling tower is controlled by discharging blowdown water from the cooling tower to a brine concentrator. The brine concentrator removes the salts and recycles 95% of the blowdown water back to the cooling and steam water system. The brine concentrator uses a distillation process to recover the water and remove the salts. Of the remaining 5%, approximately 2% evaporates and 3% of the brine concentrate is discharged into two 0.8 acre, double lined (30 mil XR-5 geomembrane) evaporation ponds equipped with leak detection, collection and recovery systems. Discharges are batch discharges followed by pipe flushing discharges of service water. There is also a third 0.9 acre double lined (60 mil HDPE) Brine Concentrator Surge Pond, with leak detection and collection system, intended to hold auxiliary cooling tower blowdown water and other flows when the brine concentrator is off-line for repairs. Evaporation pond B may also be used as a second surge pond. Small amounts of service water from floor drains, wash down water, and effluent from an oil-water separator are also discharged into the evaporation ponds. Stormwater is directed to an on-site conveyance system which discharges the stormwater offsite.

Receiving Water:

Groundwater below the plant and within a one mile radius is in excess of 860 feet below ground surface. The water supply well drilled and completed on the property is 2,028 feet deep, with a static water level approximately 686 feet below ground surface.

Summary of Changes From Previous Permit:

Due to a new permit naming convention at NDEP, Bureau of Water Pollution Control, the permit identification has been changed from NEV2003501 to NS2003501. This change does not reflect a change in the type of permit being issued.

The requirement to measure staff gauge readings in outfall 001, 002, and 003 has been changed from a weekly measurement to a monthly measurement.

The requirement to measure temperature "prior to outfall 001, 002, and 003 and in each pond receiving the discharge at time of sampling" has been removed from the permit.

Regulatory liner leakage rate monitoring and reporting has been added to the permit for outfall 001, 002, and 003.

Ponds / Rapid Infiltration Basins for Sample Location 001 (Evaporation Pond A) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	001	Continuous	METER
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	001	Continuous	METER
Freeboard	Monthly Minimum		>= 24 Inches (in)	Internal Monitoring Point[1]	001	Monthly	DISCRT

Notes (Ponds / Rapid Infiltration Basins):

1. Staff Gauge

Ponds / Rapid Infiltration Basins for Sample Location 001 (Evaporation Pond A) To Be Reported Quarterly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
pH	Value		M&R Standard Units (SU)	Effluent Gross[1]	001	Quarterly	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	001	Quarterly	DISCRT
Oil & grease	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	001	Quarterly	DISCRT
Hydrocarbons, total petroleum	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	001	Quarterly	DISCRT
Liner Leakage Rate	Daily Maximum	<= 500 Gallons per Acre per Day (gal/acre/d)		Effluent Gross	001	Quarterly	CALCTD

Notes (Ponds / Rapid Infiltration Basins):

1. Samples shall be monitored in pond at a point distal to the inlet.

Ponds / Rapid Infiltration Basins for Sample Location 001 (Evaporation Pond A) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Mercury, total (as Hg)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	001	Annual[1]	DISCRT
Chromium, total (as Cr)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	001	Annual[1]	DISCRT
Copper, total (as Cu)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	001	Annual[1]	DISCRT
Lead, total (as Pb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	001	Annual[1]	DISCRT
Nickel, total (as Ni)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	001	Annual[1]	DISCRT
Selenium, total (as Se)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	001	Annual[1]	DISCRT
Silver, total (as Ag)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	001	Annual[1]	DISCRT
Beryllium, total (as Be)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	001	Annual[1]	DISCRT
Cadmium, total (as Cd)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	001	Annual[1]	DISCRT
Zinc, total (as Zn)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	001	Annual[1]	DISCRT
Antimony, total (as Sb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	001	Annual[1]	DISCRT

Ponds / Rapid Infiltration Basins for Sample Location 001 (Evaporation Pond A) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Arsenic, total (as As)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	001	Annual[1]	DISCRT
Thallium, total (as Tl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	001	Annual[1]	DISCRT

Notes (Ponds / Rapid Infiltration Basins):

1. Annual measurements shall be conducted in the 4th quarter of each calendar year.
2. Samples shall be monitored in pond at a point distal to the inlet.

Ponds / Rapid Infiltration Basins for Sample Location 002 (Evaporation Pond B) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	002	Continuous	METER
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	002	Continuous	METER
Freeboard	Monthly Minimum		>= 24 Inches (in)	Internal Monitoring Point[1]	002	Monthly	DISCRT

Notes (Ponds / Rapid Infiltration Basins):

1. Staff Gauge

Ponds / Rapid Infiltration Basins for Sample Location 002 (Evaporation Pond B) To Be Reported Quarterly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
pH	Value		M&R Standard Units (SU)	Effluent Gross[1]	002	Quarterly	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	002	Quarterly	DISCRT
Oil & grease	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	002	Quarterly	DISCRT
Hydrocarbons, total petroleum	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	002	Quarterly	DISCRT
Liner Leakage Rate	Daily Maximum	<= 500 Gallons per Acre per Day (gal/acre/d)		Effluent Gross	002	Quarterly	CALCTD

Notes (Ponds / Rapid Infiltration Basins):

1. Samples shall be monitored in pond at a point distal to the inlet.

Ponds / Rapid Infiltration Basins for Sample Location 002 (Evaporation Pond B) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Selenium, total (as Se)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	002	Annual[1]	DISCRT
Silver, total (as Ag)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	002	Annual[1]	DISCRT
Thallium, total (as Tl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	002	Annual[1]	DISCRT
Zinc, total (as Zn)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	002	Annual[1]	DISCRT
Cadmium, total (as Cd)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	002	Annual[1]	DISCRT
Antimony, total (as Sb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	002	Annual[1]	DISCRT
Arsenic, total (as As)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	002	Annual[1]	DISCRT
Beryllium, total (as Be)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	002	Annual[1]	DISCRT
Chromium, total (as Cr)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	002	Annual[1]	DISCRT
Copper, total (as Cu)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	002	Annual[1]	DISCRT
Lead, total (as Pb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	002	Annual[1]	DISCRT

Ponds / Rapid Infiltration Basins for Sample Location 002 (Evaporation Pond B) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Mercury, total (as Hg)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	002	Annual[1]	DISCRT
Nickel, total (as Ni)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	002	Annual[1]	DISCRT

Notes (Ponds / Rapid Infiltration Basins):

1. Annual measurements shall be conducted in the 4th quarter of each calendar year.
2. Samples shall be monitored in pond at a point distal to the inlet.

Ponds / Rapid Infiltration Basins for Sample Location 003 (Brine Concentrator Surge Pond) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Freeboard	Monthly Minimum		>= 24 Inches (in)	Internal Monitoring Point[1]	003	Monthly	DISCRT
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	003	Continuous	METER
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	003	Continuous	METER

Notes (Ponds / Rapid Infiltration Basins):

1. Staff Gauge

Ponds / Rapid Infiltration Basins for Sample Location 003 (Brine Concentrator Surge Pond) To Be Reported Quarterly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Oil & grease	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	003	Quarterly	DISCRT
pH	Value		M&R Standard Units (SU)	Effluent Gross[1]	003	Quarterly	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	003	Quarterly	DISCRT
Hydrocarbons, total petroleum	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	003	Quarterly	DISCRT
Liner Leakage Rate	Daily Maximum	<= 500 Gallons per Acre per Day (gal/acre/d)		Effluent Gross	003	Quarterly	CALCTD

Notes (Ponds / Rapid Infiltration Basins):

1. Samples shall be monitored in pond at a point distal to the inlet.

Ponds / Rapid Infiltration Basins for Sample Location 003 (Brine Concentrator Surge Pond) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Beryllium, total (as Be)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	003	Annual[1]	DISCRT
Antimony, total (as Sb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	003	Annual[1]	DISCRT
Arsenic, total (as As)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	003	Annual[1]	DISCRT
Cadmium, total (as Cd)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	003	Annual[1]	DISCRT
Chromium, total (as Cr)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	003	Annual[1]	DISCRT
Copper, dissolved (as Cu)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	003	Annual[1]	DISCRT
Lead, total (as Pb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	003	Annual[1]	DISCRT
Mercury, total (as Hg)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	003	Annual[1]	DISCRT
Nickel, total (as Ni)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	003	Annual[1]	DISCRT
Selenium, total (as Se)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	003	Annual[1]	DISCRT
Silver, total (as Ag)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	003	Annual[1]	DISCRT

Ponds / Rapid Infiltration Basins for Sample Location 003 (Brine Concentrator Surge Pond) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Thallium, total (as Tl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	003	Annual[1]	DISCRT
Zinc, total (as Zn)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point[2]	003	Annual[1]	DISCRT

Notes (Ponds / Rapid Infiltration Basins):

1. Annual measurements shall be conducted in the 4th quarter of each calendar year.
2. Samples shall be monitored in pond at a point distal to the inlet.

Rationale for Permit Requirements:

Monitoring is required to characterize the water qualtiy contained in the evaporation ponds and the quantity of wastewater disposed into the ponds.

Special Conditions:

SA – Special Approvals / Conditions Table

Item #	Description
1	Section B.PB.9.6 - Color photographs of the permitted facilites and operations apply only to the processes applicable to the permitted discharges (e.g., ponds, discharge points, leak detections sumps, etc.)
2	Section B.PB.10 - Does not apply to this permit. The freeboard requirement for the ponds are approved for 2 feet in accordance with the report and calculations provided to and reviewed by NDEP.

Flow:

The design treatment capacity for the plant is 0.1022 MGD 30-day average and daily max. The current operational flows for the plant are 0.0313 mgd 30 day average and 0.531 MGD daily max.

Corrective Action Sites:

There are no Bureau of Corrective Actions remediation sites located within one mile of this facility.

Wellhead Protection Program:

This facility is not located within a Drinking Water Protection Area or an active Wellhead Protection Area established for any current well sources.

Schedule of Compliance:

SOC – Schedule of Compliance Table

Item #	Description	Due Date
1	The Permittee shall submit for review and comment two (2) copies of an updated Operations and Maintenance (O&M) Manual. The O&M Manual shall be prepared by a Nevada Registered Professional Engineer or a Division-approved qualified person. O&M Manuals prepared by a Nevada Registered Professional Engineer must be signed and stamped in accordance with NAC 625.610. If no updates or revisions are required, the Permittee shall submit a letter stating such by the due date noted.	6/1/2015

Deliverable Schedule:

DLV– Deliverable Schedule for Reports, Plans, and Other Submittals

Item #	Description	Interval	First Scheduled Due Date
1	Quarterly DMRs	Quarterly	7/28/2015
2	Annual Report	Annually	1/28/2016

Procedures for Public Comment:

The Notice of the Division's intent to issue a permit authorizing the facility to discharge to groundwater of the State of Nevada subject to the conditions contained within the permit, is being sent to the **Las Vegas Review Journal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing until 5:00 P.M. **3/2/2015** , a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator of EPA Region IX 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 determined to be appropriate. All public hearings must be conducted to 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 / re-issue the proposed 5-year permit.

Prepared by: **Michele Reid**
Date: **1/21/2015**
Title: **Staff I Associate Engineer**