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CEC & CDFW JOINT PROPOSAL

Conditions of Certification SOIL&WATER-1, -4, -5, -6, -13, -22, -23

SOIL&WATER-1 Water Supplies

The only water used for project operation (except for domestic purposes) shall be State Water Project (SWP) water obtained by the project owner consistent with the provisions of the Mojave Water Agency's (MWA) Ordinance 9 and/or appropriately treated recycled waste water~~., and/or an alternative water supply obtained from the Mojave River Basin (MRB) consistent with the "Judgment After Trial" dated January 1996 in City of Barstow, et al., v. City of Adelanto, et al. (Riverside County Superior Court Case No. 208568) ("MRB Water Rights") as administered by the Watermaster (the "Judgment").~~

~~b. The project owner shall implement an interim "Loading Sequence" in the following order:~~

a. ~~1.~~ The project owner ~~will~~**shall** use recycled waste water ~~as the primary water s~~upply, to the extent it is available and its quality is sufficient to maintain cooling tower functions and reliable operation of the facility**, provided that the use of recycled waste water:**

1. **shall not exceed 2,500 acre-feet per year (AFY) in any calendar year (the "Maximum Annual Recycled Water Use");**
2. **shall not exceed 2,000 AFY calculated on 3-year calendar year rolling average (the "Average Annual Recycled Water Use"); and**
3. **shall meet a minimum of 25% of annual cooling water needs, excluding periods recycled water is not available or is not of sufficient quality, calculated on a three-year rolling average basis (the "Average Annual Recycled Water Blend Percentage")**.

If any of these three criteria are not satisfied, then the project owner shall mitigate or offset the project water use as specified in SOIL&WATER-23. However, if any of these three criteria are not satisfied because of an extensive, unavoidable disruption of water supply due to an Act of God, a natural disaster, an emergency, or other unforeseen circumstance outside the exclusive control of the project owner, the CPM, project owner, and CDFW shall meet and determine how best to restore water use in compliance with the terms of SOIL&WATER-1 as soon as practicable.

The Maximum Annual Recycled Water Use, the Average Annual Recycled Water Use and Average Annual Recycled Water Blend Percentage shall be calculated and reported based on the metered data. The project owner shall exclude from the calculations (1) water used when recycled water is unavailable when the project requests recycled water; and (2) water used when recycled water of sufficient quality is unavailable when the project requests

recycled water per the water quality specification in the project owner's agreement with its retail water supplier. Recycled Water unavailability shall be logged by the facility's operators and reported monthly to the Energy Commission Compliance Project Manager (CPM).

b. ~~2. If there is insufficient recycled waste water of quality or quantity sufficient to maintain cooling tower functions and reliable operation of the facility, r~~**R**ecycled waste water may be blended with either (a) directly available SWP water or (b) banked SWP Water **that has been either percolated or injected ("Banked SWP Water") and is available for extraction in accordance with SOIL&WATER-6.** ~~from the four HDPP wells as long as the amount of banked SWP water used does not exceed the amount of water determined to be available to the project pursuant to SOIL&WATER-5.~~

~~3. If there is insufficient directly available SWP Water of quality or quantity sufficient to maintain cooling tower functions for reliable operation of the facility and the amount of banked SWP water determined to be available to the project pursuant to SOIL&WATER-5 is less than 4,000 acre-feet (AF) in water year 2015/2016 (ending September 30, 2016) and less than 5,000 AF in water year 2016/2017 (ending September 30, 2017), the project owner may blend recycled waste water with MRB Water Rights to achieve the required cooling tower blowdown rate or cooling tower functionality, subject to the limitations contained above.~~

~~4. The Project Owner shall consume no more than 2,000 AF of MRB Water Rights in water year 2015/2016 (October 1, 2015 – September 30, 2016) and no more than 2,000 AF in water year 2016/2017 (October 1, 2016 – September 30, 2017). The acquisition, use and transfer of MRB Water Rights shall comply with the Judgment and Rules and Regulations of the Watermaster.~~

At the project owner's discretion, dry cooling may be used instead, if an amendment to the Commission's decision allowing dry cooling is approved.

~~b~~ **c.** The project owner shall report, on or before the 15th of each month, the use of water from all sources for the prior month to the ~~Energy Commission~~ CPM in acre-feet. The monthly report shall include acre-feet usage by source, as well as total. **Specific recycled water events of unavailability or quality issues will also be included with daily detail.**

~~c~~ **d.** The project's water supply facilities shall be appropriately sized and utilized to meet project needs. The project shall make maximum use of recycled waste water for power plant cooling given current equipment capabilities and permit conditions.

VERIFICATION: ~~The project owner shall provide final design drawings of the project's water supply facilities to the CPM, for review and approval, thirty (30) days before commencing project construction. The project owner shall submit to the CPM documentation showing the agreements entered into between the project owner, MWA Watermaster, and water right owners in MRB regarding the acquisition, use and transfer of MRB Water Rights.~~ The project owner shall report all use of water **and recycled water**

unavailability in acre feet to the ~~Energy Commission~~ CPM **and CDFW** on a monthly basis for each supply: Recycled Water, SWP Water, **and** Banked SWP Water~~, and MRB Water Rights~~. The monthly report shall contain a brief statement on ~~(1)~~ the water quantity and water quality of the supplies available in the prior month ~~and (2) a summary of efforts to use available supplies to provide cooling water for operations, build the HDPP groundwater bank, and/or preserve the HDPP water b~~ank.

SOIL&WATER-4 ~~Injection~~ Banking Schedule

~~a. The project owner shall inject one thousand (1000) acre-feet of SWP water within twelve (12) months of the commencement of the projects commercial operation.~~

~~b. By the end of the four years and two months from the start of commercial operation, the project owner shall install and begin operation of a pre-injection ultraviolet (UV) disinfection system.~~

~~c. By the end of the fifth year of commercial operation, the project shall submit a report to the CPM demonstrating that HDPP has maintained an average THM concentration level consistent with the WDR permit requirements.~~

a. ~~After the end of the fifth year of commercial operation, t~~**The** project owner ~~shall~~ **may** inject SWP water when it is available in excess of volumes needed to operate the project, up to a cumulative quantity of 13,000 acre-feet, subject to equipment capabilities and permit requirements. The amount of **injected SWP** water available to HDPP for extraction is equal to Injection minus Extraction minus Dissipation minus 1000 acre-feet, as defined in SOIL&WATER-6.

b. The project owner may bank SWP water in the Mojave Groundwater Basin through percolation using existing Mojave Water Agency (MWA) facilities for the sole use at the HDPP facility subject to the terms of any necessary agreement(s) with MWA, the Mojave Basin Area Watermaster, the City of Victorville or the Victorville Water District. MWA shall be responsible for ensuring protection of water quality related to percolation.

VERIFICATION: ~~The project owner shall submit an installation and operation report describing the pre-injection ultraviolet disinfection system (UV) by the end of the fourth year of commercial operation~~. Forecasted estimates of SWP water to be injected shall be included in the quarterly Aquifer and Storage Recovery Well Report. ~~The project owner shall submit a UV performance report by the fifth year of commercial operation.~~ For other related items, see the verification to Condition 5. See also the verification to Condition 12. **The project owner shall provide to the CPM and to the California Department of Fish and Wildlife (CDFW) a copy of any agreement(s) with MWA, Mojave Basin Area Watermaster, City of Victorville or Victorville Water District regarding use of existing MWA facilities for the percolation and banking of SWP water for the facility.**

SOIL&WATER-5 Calculation of Water Bank Balance

a. The amount of **injected,** banked groundwater available to the project shall be calculated by the ~~CEC~~ **Energy Commission** staff using the **High Desert Power Project (**HDPP**)** model, FEMFLOW3D. The amount of **injected,** banked groundwater available shall be updated on a calendar year basis by the ~~CEC~~ **Energy Commission** staff, taking into account the amount of groundwater pumped by the project during the preceding year and the amount of water banked by the project during the preceding year.

b. When calculating the amount of **injected,** banked groundwater available to the project, ~~CEC~~ **Energy Commission** staff shall subtract any amount of water that is produced by ~~Victor Valley~~ **Victorville** Water District (~~V~~VWD) from the project wells for purposes other than use by the project that exceeds the baseline, as defined in SOIL&WATER-17(1).

c. Each annual model run shall simulate the actual sequence of historic pumping and injection since the injection program began. From the model runs, the ~~CEC~~ **Energy Commission** s~~S~~taff shall determine the amount of groundwater available for each new calendar year. If the amount of **injected,** banked groundwater ~~**available to the project**~~ is less than one (1) year's supply plus 1,000 acre-feet, the ~~CEC~~ **Energy Commission** s~~S~~taff shall determine the amount of groundwater available to the project on a quarterly basis.

d. The amount of percolated, banked groundwater available to the project shall be calculated by MWA or the Mojave Basin Area Watermaster.

VERIFICATION: ~~During the period beginning eighteen (18) months after the start of rough grading and concluding at the end of the first month after one full year (12 months) of commercial operation, the project owner shall provide a monthly report to the CEC CPM and to the CDFG on the progress of construction of the project wells, and shall identify the amount of SWP water injected and the amount of groundwater pumped during the previous month. The CEC CPM shall provide notice that this material has been submitted to those identified on the project's compliance mailing list.~~

After the end of the first month after one full year (12 months) of commercial operation, the project owner shall submit to the ~~CEC~~ CPM and ~~to the~~ CDF~~G~~**W** in writing, on a quarterly basis, a monthly accounting of all groundwater pumped**,** ~~and~~ all SWP water treated and injected**, and all SWP water banked through percolation by MWA** in the preceding quarter. Within thirty (30) days of receipt of the approved annual storage agreement, pursuant to **SOIL&WATER-2**, the project owner shall submit to the ~~CEC~~ CPM and to the CDF~~G~~**W** an annual written estimate of the anticipated amount of SWP water that will be banked and the anticipated amount of groundwater that will be pumped in the coming year. If the amount of **injected,** banked groundwater available to the project is less than ~~one (~~1~~)~~ year's supply plus ~~one thousand (~~1,000~~)~~ acre-feet, quarterly estimates of anticipated injection and withdrawal will be required. ~~The CEC CPM shall provide notice that this material has been submitted to those identified on the project's compliance mailing list.~~

~~CEC~~ **Energy Commission** s~~S~~taff shall use this information in the HDPP model to evaluate the

amount of banked groundwater available and to calculate the approximate rate of decay **for the injection bank**. ~~CEC~~ **Energy Commission** s~~S~~taff shall notify the project owner within ~~thirty (~~30~~)~~ days of the amount of banked groundwater available to be pumped in the new calendar year or in the next quarter, if applicable.

SOIL&WATER-6 Banked Water Available for Project Use

~~a. The amount of banked groundwater available to the project during the first twelve (12) months of commercial operation is the amount of SWP water injected by the project owner into the High Desert Power Project (project) wells, minus the amount of groundwater pumped by the project owner, minus the amount of dissipated groundwater, and minus any amount described in SOIL&WATER-5(b).~~

a.~~b.~~ The amount of banked groundwater available to the project after the first ~~twelve (~~12~~)~~ months of commercial operation is: **(1) the amount of SWP water percolated in accordance with SOIL&WATER-4(b**~~e~~**); and (2)** the amount of SWP water injected by the project owner into the project wells**,** minus the amount of groundwater pumped by the project owner, minus the amount of dissipated groundwater, minus ~~one thousand (~~1,000~~)~~ acre feet, and minus any amount described in SOIL&WATER-5(b).

b.~~c.~~ During the three (3) years prior to project closure, the project owner may withdraw the balance of banked groundwater determined to be available to the project, except ~~for one thousand (~~1,000~~)~~ acre-feet, pursuant to SOIL&WATER-5. The project owner is not required to replace this final withdrawal of groundwater. However, during the three (3) years prior to project closure, at no time may the balance of banked groundwater decline below ~~one thousand (~~1,000~~)~~ acre-feet. Furthermore, there must be a remaining balance of ~~one thousand (~~1,000~~)~~ acre-feet banked in the groundwater system at closure, as determined to be available to the project pursuant to SOIL&WATER-5. This balance of ~~one thousand (~~1,000~~)~~ acre-feet must remain in the groundwater system, and the project owner, by contract or other conveyance, may not transfer the rights to this balance.

c. The project shall not operate for longer than thirty (30) years unless the Commission has approved an amendment to its license that specifically evaluates the water resources impacts of continued operation and imposes any mitigation necessary to ameliorate any identified impacts.

d.~~e.~~ No water is available for project use if the requirements of SOIL&WATER-4 are not met by the project owner.

VERIFICATION: The project owner shall use the same verification as for **SOIL&WATER-5**; however, in addition, any facility closure plan submitted during that last three (3) years of commercial operation shall address the disposition of any remaining water available to the project, as well as the disposition of the water treatment facility.

SOIL&WATER-13

The project owner shall implement the approved water treatment and monitoring plan. All ~~banked~~ **injected** SWP water shall be treated to meet local groundwater conditions as identified in Condition SOIL&WATER-12. Treatment levels may be revised by the ~~CEC~~ **Energy Commission** and, if applicable, by the **Regional Water Quality Control Board (**RWQCB**)**, based upon changes in local groundwater quality identified in the monitoring program not attributable to the groundwater banking program. Monitoring results shall be submitted annually to the ~~CEC~~ CPM and, if applicable, to the RWQCB.

VERIFICATION: The project owner shall annually submit monitoring results as specified in the approved plan to the ~~CEC~~ CPM. The project owner shall identify any proposed changes to SWP water treatment levels for review and approval by the ~~CEC~~ **Energy Commission** and, if appropriate, the Lahontan RWQCB. The project owner shall notify the RWQCB, the ~~V~~VWD, and the ~~CEC~~ CPM of the injection of any inadequately treated SWP water into the aquifer due to an upset in the treatment process or for other reasons. Monitoring results shall be submitted to the ~~CEC~~ CPM**.**

~~**SOIL & WATER-22.**~~
~~Until September 30, 2018, and notwithstanding the existing Soil & Water Conditions of Certification, the project owner may percolate SWP water consistent with an agreement with MWA (or modification to any existing agreement regarding SWP water banking), provided that the amount of percolated water that will be available to withdraw for power plant cooling shall be calculated in the same manner as for injected SWP water pursuant to Conditions of Certification Soil & Water 4, 5, and 6.~~

~~**VERIFICATION**: If the project owner and MWA are able to reach an agreement or modify existing agreements regarding use of existing MWA facilities for the percolation of SWP water, the project owner shall provide a copy of such agreement or modified agreements, and any subsequent modifications to the CPM, within 10 days of their finalization.~~

SOIL&WATER-23 Water Conservation Offset and Environmental Enhancement Program

In accordance with SOIL&WATER-1, where:

1. **The Maximum Annual Recycled Water Use exceeds 2,500 acre-feet per year (AFY) in any calendar year; or**
2. **The Average Annual Recycled Water Use exceeds 2,000 AFY calculated on 3-year calendar year rolling average:**

   The project owner shall fund an environmental enhancement program for the benefit of the Mojave River riparian habitat in the Transition Zone. The amount of funding to be provided for the program shall be equal to the cost of State Water Project water, as determined by the CPM, which exceeded the maximum amount specified in item 1 or 2 above. The funds shall be paid to the program on an annual basis and made available for use at any time the CPM approves an expenditure. The CPM and CDFW shall meet and confer on how the funds should be spent.

In accordance with SOIL&WATER-1, where:

3. **The Average Annual Recycled Water Blend Percentage is less than a minimum of 25% of annual cooling water needs, excluding periods recycled water is not available or is not of sufficient quality, calculated on a three-year rolling average basis:**

   The project owner shall implement a water conservation offset program to mitigate impacts from use of SWP or banked water needed to make-up the shortfall between actual recycled water use and the 25% minimum water use, on a calendar year basis. The water conservation offset shall be equal to the shortfall. The water conservation offset program (WCOP) shall be implemented in the SWP service area and reduce demand on the SWP. The offset measures shall consider activities such as payment for irrigation improvements in the SWP service area, urban water conservation measures in the SWP service area, enhance or restore environmental resources, or other proposed activities acceptable to the CPM.

   The WCOP shall be provided to the CPM for review and approval and shall include the following at a minimum:

   A. **Identification of the activity or measures that will achieve the water use offset;**
   B. **Demonstration of the Project owner's ability to conduct the activity;**
   C. **Whether any governmental approval of the identified offset will be needed, and if so, whether additional approval will require compliance with CEQA or NEPA;**
   D. **Demonstration of how much water is provided by each of the offset measures;**
   E. **An estimated schedule for completion of the offset activities;**
   F. **Performance measures that would be used to evaluate the reduction in demand on the SWP; and,**
   G. **A Monitoring and Reporting Plan outlining the steps necessary and proposed frequency of reporting to show the activities are achieving the intended reductions in demand.**

VERIFICATION: Where the project owner exceeds the maximum use of recycled water outlined in item 1 or 2 above a report shall be provided within 30 days of the exceedance and no later than within 30 days of the end of calendar year in which the exceedance occurred.

As outlined in item 3 above the project owner shall submit a WCOP to the CPM for review and approval 30 days after reporting the occurrence of a failure to meet the annual minimum recycled water use requirement. The project owner shall implement the activities reviewed and approved in the WCOP in accordance with the agreed upon schedule in the WCOP. Any reports on the status of conservation offsets may be combined with the water use reports required in accordance with SOIL&WATER-1.