



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

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U.S. EPA

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January 9, 2006

Reply To
Attn Of: ORC-158

VIA FEDERAL EXPRESS

U.S. Environmental Protection Agency
Clerk of the Environmental Appeals Board
1341 G Street NW, Suite 600
Washington, DC 20005

Re: Wanapa Energy Center
Permit No.: R10PSD-OR-05-01
Appeal No.: PSD 05-06

Dear Clerk of the Board:

Pursuant to a voicemail message that I received from David Heckler, I am enclosing the draft PSD permit that was issued for public comment in 2004. If you have any questions or concerns, please feel free to call me at (206) 553-1477.

Sincerely,

Courtney Hamamoto
Assistant Regional Counsel

cc: Ken Thompson (McRae Ranch, 81157 McRae Road, Helix, OR 97835)



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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

1200 Sixth Avenue
Seattle, Washington 98101

**PREVENTION OF SIGNIFICANT DETERIORATION
PROPOSED PERMIT TO CONSTRUCT**

Permit Number: R10PSD-OR-05-01

Issue Date: TBD

Effective Date: TBD

In accordance with the provisions of Part C to Title I of the Clean Air Act and Code of Federal Regulations Title 40, Section 52.21,

Diamond Wanapa I, L.P.
333 S. Grand Ave., Suite 1570
Los Angeles, California 90071

is authorized to construct and operate air emission units and to conduct other air pollutant emitting activities in accordance with the permit conditions listed in this permit. This applicant is authorized to construct and operate the Wanapa Energy Center on land held in trust by the United States Government for the Confederated Tribes of the Umatilla Indian Reservation at the following location:

20-acre parcel of land, zoned industrial, 3 miles east of Umatilla, Oregon,
south of the Columbia River and north of the Columbia River Highway
between Two Rivers Correctional Institution and Hat Rock State Park.
Latitude: 45°N 55'37" and Longitude: 119°W 14'02"

Terms not otherwise defined in this permit have the meaning assigned to them in the referenced regulations. All terms and conditions of the permit are enforceable by the United States Environmental Protection Agency and citizens under the Clean Air Act.

This Prevention of Significant Deterioration permit has been approved by:

Richard Albright
Director
Office of Air, Waste and Toxics
U.S. Environmental Protection Agency, Region 10

Date

ABBREVIATIONS AND ACRONYMS

AQVR: Air quality related values
BACT: best available control technology
CEMS: continuous emissions monitoring system
CFR: Code of Federal Regulations
CO: carbon monoxide
CT: combustion turbine
CTUIR: Confederated Tribes of the Umatilla Indian Reservation
DB: duct burner
Diamond: Diamond Wanapa I, L.P.
EPA: United States Environmental Protection Agency
GTN: Gas Transmission Northwest Corporation
HAP: hazardous air pollutant
HRSG: heat recovery steam generator
lb: pound
MMBtu/hr: Million British thermal units per hour
MW: megawatt
NAAQS: National Ambient Air Quality Standards
NESHAP: National Emission Standards for Hazardous Air Pollutants
NH₃: ammonia
NO₂: nitrogen dioxide
NSR: new source review
O₂: oxygen
O₃: ozone
PM₁₀: particulate matter with an aerodynamic diameter less than 2.5 micrometers
PM₁₀: particulate matter with an aerodynamic diameter less than 10 micrometers
ppm_{dv}: parts per million on a dry volumetric basis
ppmw: parts per million by weight
PSD: Prevention of Significant Deterioration
SCR: selective catalytic reduction
SO₂: sulfur dioxide
SSMP: Startup, shutdown, and malfunction plan
ST: steam turbine
TDS: total dissolved solids
tpy: ton per year
VOC: volatile organic compound
WEC: Wanapa Energy Center

AUTHORITY

The United States Environmental Protection Agency (EPA) is proposing to issue this prevention of significant deterioration (PSD) permit pursuant to the federal PSD air quality regulations, Code of Federal Regulations (CFR) Title 40, Section 52.21. This proposed action is based upon the application submitted by Diamond Wanapa I, L.P. (Diamond) on August 8, 2003, revised dispersion modeling analysis report submitted September 28, 2004, additional dispersion modeling information submitted October 28 and November 1, 2004, and the technical analysis performed by EPA.

DESCRIPTION OF PROJECT

- 1 Diamond and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) entered into an agreement to develop and construct a greenfield combined cycle electric generating facility. The agreement was made in conjunction with the City of Hermiston, the City of Eugene acting through the Eugene Water & Electric Board, and the Port of Umatilla. The proposed facility is to be known as the Wanapa Energy Center (WEC) and will be located at latitude 45°N 55'37" and longitude 119°W 14'02" on land held in trust by the federal government for the benefit of the CTUIR near Umatilla, Oregon.
- 2 The design of the WEC will incorporate two similar blocks (in a 2 by 1 configuration) of combined cycle power generation. The nominal capacity of each block will be 600 megawatts (MW). Each block will consist of two combustion turbines (CT), two heat recovery steam generators (HRSG) each equipped with a duct burner (DB), and one steam turbine (ST). Exhaust gas from each CT will be routed to a dedicated HRSG before discharge to the atmosphere through a common stack. The HRSG will produce steam to be utilized on-site by the ST. Steam exhausted by the ST flows to a cooling tower, is condensed, and returned to the HRSG. Cooling tower water will be supplied from the Columbia River.
- 3 The WEC will consist of:
 - 3.1 Four F-technology CTs. The maximum heat input to each CT is approximately 1,778.5 million British thermal units per hour (MMBtu/hr).
 - 3.2 Four CT electric generators. Each CT will supply mechanical power to a dedicated electric generator. The maximum electric generating capacity of each CT generator is approximately 172.3 MW.
 - 3.3 Four HRSGs. Each HRSG is equipped with a DB. The maximum heat input to each DB is approximately 605.6 MMBtu/hr.

- 3.4 Two STs. Each ST will receive steam from two dedicated HRSGs.
- 3.5 Two ST electric generators. Each ST will supply mechanical power to a dedicated electric generator. The maximum electric generating capacity of each ST generator is approximately 326.5 MW.
- 3.6 Two mechanically induced draft evaporative cooling towers. Each tower will receive hot water from the block's steam cycle condenser.
- 3.7 One backup diesel engine emergency fire pump rated at approximately 350 horsepower.
- 4 Natural gas provided by Gas Transmission Northwest Corporation (GTN) will be the only fuel combusted in each CT and DB. For the most part, natural gas within the GTN pipeline consistently achieves a sulfur content of less than 10 parts per million by weight (ppmw) based upon monitoring data provided by GTN.
- 5 Motor vehicle diesel fuel will be the only fuel combusted in the backup diesel engine emergency fire pump. The maximum concentration of sulfur in motor vehicle highway diesel fuel available for purchase is currently 500 ppmw and will decrease to 15 ppmw by mid-2006.

FACTS

- 1 WEC will be located in the vicinity of minority populations, and EPA is responsible for addressing environmental justice within these communities pursuant to Executive Order 12898. EPA is required to identify and address disproportionately high and adverse human health or environmental effects, if any, on minority populations due to this PSD permit approval. In February 2004, EPA conducted a public meeting in Hermiston, Oregon to educate the public about WEC and the PSD permit process so as to promote the meaningful involvement of the community.
- 2 WEC is located in the northeast Oregon intrastate air quality control region. With the exception of the urban growth boundary area for LaGrande, the ambient air in this region is either unclassifiable or attaining the national ambient air quality standards (NAAQS) for carbon monoxide (CO), lead, nitrogen dioxide (NO₂), 1-hour (1-hr) and 8-hr ground-level ozone (O₃), particulate matter with an aerodynamic diameter less than 10 micrometers (PM₁₀), and sulfur dioxide (SO₂). With respect to the region's attainment of the 24-hr and annual NAAQS for particulate matter with an aerodynamic diameter less than 2.5 micrometers (PM_{2.5}), the State of Oregon has recommended to EPA that the region be designated attainment or unclassifiable.

- 3 WEC is located just across the Columbia River from the south central Washington air quality control region. With the exception of the limited geographic areas within Yakima County and Wallula, the ambient air in this region is either unclassifiable or attaining the NAAQS for CO, lead, NO₂, 1-hr and 8-hr ground-level O₃, PM₁₀, and SO₂. With respect to the region's attainment of the 24-hr and annual NAAQS for PM_{2.5}, the State of Washington has recommended to EPA that the region be designated attainment or unclassifiable.
- 4 The approximate distance and direction from WEC to the three PM₁₀ nonattainment areas are as follows: Wallula, Washington - 35 miles to the northeast, LaGrande, Oregon - 95 miles to the southeast, and Yakima County, Washington - 100 miles to the northwest.
- 5 The approximate distance and direction from WEC to Class I United States Forest Service wilderness areas are as follows: Eagle Cap - 83 miles to the southeast, Strawberry Mountain - 103 miles to the south, Mount Adams - 112 miles to the northwest, Mount Hood - 112 miles to the west, and Goat Rocks - 121 miles to the northwest. The Columbia River Gorge National Scenic Area is approximately 75 miles to the west.

PRELIMINARY FINDINGS

- 1 WEC is subject to the federal PSD permitting requirements of 40 CFR 52.21. WEC is a fossil fuel fired steam electric plant with heat input of more than 250 MMBtu/hr; one of the 28 listed source categories with a "major source" threshold level of 100 tons per year (tpy). If a source's potential to emit any one regulated new source review (NSR) pollutant is at least 100 tpy, it is a "major source" subject to PSD review. As noted in Table 1, WEC is a "major source" as it will emit three regulated NSR pollutants above the 100 tpy threshold level.
- 2 WEC has the potential to emit significant quantities of CO, nitrogen oxides (NO_x), particulate matter (PM), PM_{2.5}, PM₁₀, SO₂, sulfuric acid mist (H₂SO₄), and volatile organic compounds (VOC). Each of these NSR regulated pollutants is undergoing PSD review given that each is emitted at a rate greater than a pollutant-specific threshold defined by EPA as significant. Consistent with EPA guidance, PM₁₀ will serve as a surrogate for PM and PM_{2.5}.
- 3 Diamond has requested that EPA limit WEC's annual VOC emissions to less than 100 tpy, thereby exempting WEC from the requirement to conduct ambient O₃ monitoring. Without the requested limit, WEC's potential to emit VOC is 345 tpy assuming each CT and DB is operated at its maximum firing rate for each hour of the year.
- 4 WEC is required to (a) install best achievable control technology (BACT) to minimize emissions of regulated NSR pollutants, (b) demonstrate that its allowable or permitted emissions will not cause or contribute to a NAAQS or increment violation, and (c) demonstrate that its allowable emissions will not have an adverse impact upon Class I air

quality related values (AQRV). Table 1 summarizes WEC's annual allowable emissions, including startup emissions, under this proposed permit.

Table 1 - WEC Annual Allowable Emissions (including startup emissions)

CO	933	Four CT and HRSG: Exclusive use of pipeline natural gas ⁽¹⁾ and oxidation catalyst. One Backup Diesel Engine: A new engine that satisfies the EPA 2004 highway heavy-duty diesel-cycle engine standards or the standards applicable at time of purchase, whichever is later.
PM ₁₀	562	Four CT and HRSG: Exclusive use of pipeline natural gas, proper design and operation of equipment, minimize ammonia (NH ₃) slip. Two Cooling Towers: Install a high-efficiency drift eliminator with a guaranteed efficiency of 0.0005%. The total dissolved solids (TDS) content within the cooling water shall remain less than 3,532 ppmw. One Backup Diesel Engine: A new engine that satisfies the EPA 2004 highway heavy-duty diesel-cycle engine standards or the standards applicable at time of purchase, whichever is later. Exclusive use of motor vehicle diesel fuel as specified by EPA at time of purchase.
NO _x as NO ₂	486	Four CT and HRSG: Exclusive use of pipeline natural gas, lean premix dry low-NO _x CT combustor and dry low-NO _x DB, selective catalytic reduction (SCR). One Backup Diesel Engine: A new engine that satisfies the EPA 2004 highway heavy-duty diesel-cycle engine standards or the standards applicable at time of purchase, whichever is later.

¹Pipeline natural gas means natural gas provided by a supplier through a pipeline. Pipeline natural gas, for purposes of this PSD permit, does not mean pipeline natural gas as defined by EPA at 40 CFR 72.2.

VOC	99	Four CT and HRSG: Exclusive use of pipeline natural gas and oxidation catalyst. One Backup Diesel Engine: A new engine that satisfies the EPA 2004 highway heavy-duty diesel-cycle engine standards or the standards applicable at time of purchase, whichever is later.
H ₂ SO ₄	88	Four CT and HRSG: Exclusive use of pipeline natural gas. One Backup Diesel Engine: Exclusive use of motor vehicle diesel fuel as specified by EPA at time of purchase.
SO ₂	57	Four CT and HRSG: Exclusive use of pipeline natural gas. One Backup Diesel Engine: Exclusive use of motor vehicle diesel fuel as specified by EPA at time of purchase.

- 5 WEC has the potential to emit up to 279 tpy of ammonia (NH₃) with the utilization of selective catalytic reduction (SCR) to satisfy BACT in controlling NO_x emissions. Although NH₃ is not a listed regulated NSR pollutant, EPA is requiring WEC to minimize the collateral impacts (NH₃ emissions) by ensuring proper and efficient operation of the SCR control system².
- 6 Diamond has submitted an analysis of the impact WEC emissions will have on ambient air quality. The analysis predicts ambient air pollutant concentrations and AQRV impacts resulting from WEC and nearby source emissions by utilizing background air quality measurements, meteorological data, and dispersion modeling techniques. EPA has reviewed this analysis and finds that it conforms to the rules and EPA modeling guidance.
- 7 NAAQS and Class II Increment Analysis. Allowable emission from WEC will not cause or contribute to air pollution in violation of the NAAQS or PSD Class II increment. WEC emissions will not result in a significant off-property impact for CO and SO₂. WEC emissions will result in a significant off-property impact for NO₂, O₃, and PM₁₀. WEC will not have a significant impact in the LaGrande, Oregon, Wallula, Washington, or Yakima County, Washington PM₁₀ nonattainment areas.

²The authority to address collateral impacts is the subject of a June 3, 1986 EPA Remand Order for North County Resource Recovery Associates, PSD Appeal No. 85-2.

- 8 Class I Increment Analysis. Allowable emissions from WEC will not cause or contribute to air pollution in violation of PSD Class I increment for NO_2 , PM_{10} , or SO_2 . WEC emissions will not result in a significant impact on Class I areas. Because WEC emissions will not result in significant concentrations of NO_2 , PM_{10} , or SO_2 , emissions from nearby sources were not considered and a cumulative impact analysis was not required.
- 9 Class I AQRV Analysis. Allowable emissions from WEC will not adversely impact AQRVs, including visibility and acid deposition. Because WEC emissions will not result in significant nitrogen loading, sulfur loading, or visibility degradation, a cumulative impact analysis was not performed.
- 10 Each CT is subject to emission limitation, monitoring, recordkeeping and reporting requirements of 40 CFR Part 60, Subpart GG - Standards of Performance for Stationary Gas Turbines.
- 11 Each HRSG is subject to emission limitation, monitoring, recordkeeping and reporting requirements of 40 CFR Part 60, Subpart Da - Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978.
- 12 Based upon estimates of hazardous air pollutant (HAP) emissions presented in the PSD permit application, WEC will be a major source of HAP.
- 13 Each CT is subject to EPA's National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines - NESHAP Subpart YYYYY. EPA has temporarily stayed the effectiveness of NESHAP Subpart YYYYY, apart from the initial notification requirement, for new lean pre-mix natural gas-fired combustion turbines like those proposed at WEC. The temporary stay was promulgated in light of an EPA proposal to delist new lean pre-mix natural gas-fired combustion turbines from regulation under Section 112 of the Clean Air Act. Depending upon EPA's final delisting decision, each CT may not ultimately be subject to NESHAP Subpart YYYYY.
- 14 EPA has determined that WEC will comply with NESHAP Subpart YYYYY requirements that remain effective. EPA has also determined that WEC is capable of complying with the NESHAP Subpart YYYYY requirements that are currently stayed. This permit serves as a Section 112(i)(1) preconstruction approval pursuant to 40 CFR 63.5(e).
- 15 Each HRSG is a natural gas-fired electric utility steam generating unit (EUSGU). EPA has determined that regulation of HAP emissions from natural-gas fired EUSGUs is not appropriate or necessary. Thus, EPA has developed no NESHAP for the HRSGs.

16 Each CT and HRSG is subject to EPA's Acid Rain Program pursuant to 40 CFR Part 72 through 78.

17 WEC is subject to EPA's operating permit program pursuant to 40 CFR Part 71. WEC is required to apply for an operating permit within 12 months of startup.

18 WEC has satisfied all requirements necessary for issuance of a PSD permit for the construction and operation of the WEC.

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PROPOSED APPROVAL CONDITIONS

- 1 Diamond is authorized to construct and operate WEC consistent with the representations in the permit application and subject to the following conditions:
- 2 Backup Diesel Engine Driven Emergency Fire Pump
 - 2.1 The backup diesel engine utilized to drive the emergency fire pump:
 - 2.1.1 Shall not exceed 350 HP,
 - 2.1.2 May operate up to 52 hours per year for purposes of maintenance and training,
 - 2.1.3 Shall comply with the EPA 2004 highway heavy-duty diesel-cycle engine standards of 40 CFR 86.004-11 or the EPA highway heavy-duty diesel-cycle engine standards applicable at time of purchase, whichever is later, and
 - 2.1.4 Shall combust only motor vehicle diesel fuel as specified by EPA in 40 CFR 80.520(a)(1). WEC is limited to purchasing motor vehicle diesel fuel with a maximum sulfur content of 15 ppmw beginning July 15, 2006 if the shipment originates from a terminal. If the shipment originates from a retail outlet or a wholesale purchaser-consumer facility, compliance is not required until September 1, 2006.
 - 2.2 Compliance with Condition 2.1.1 shall be demonstrated by engine purchase records.
 - 2.3 Compliance with Condition 2.1.2 shall be demonstrated by maintaining a log of operating hours and reason for operation. Actual emergency firefighting hours shall not be considered for purposes of demonstrating compliance with the annual operating limit in Condition 2.1.2.
 - 2.4 Compliance with Condition 2.1.3 shall be demonstrated by certification of the engine manufacturer.
 - 2.5 Compliance with Condition 2.1.4 shall be demonstrated by fuel purchase records.
- 3 CT and HRSG-DB Fuel Supply
 - 3.1 Each CT and HRSG-DB shall combust only pipeline natural gas.
 - 3.2 Compliance shall be demonstrated through documentation as provided in a pipeline transportation contract.
- 4 Oxidation Catalyst Equipment
 - 4.1 Each CT/HRSG-DB exhaust stack shall be equipped with a functioning oxidation catalyst.
- 5 Commencing Commercial Operation & Emission Limit Applicability
 - 5.1 Commencing commercial operation means to begin generating electricity for sale, including the sale of test generation. This determination is made on an individual CT/HRSG-DB basis.
 - 5.2 The emissions limits and work practice standards established within permit Conditions 6,

7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17 do not apply until after the affected emissions unit commences commercial operation.

6 CT Startup, Shutdown, and Normal Operating Conditions

6.1 CT normal load is defined as any operating period during which the heat input of the CT is at least 50% of CT capacity. Heat input, for the purpose of this paragraph, is measured in terms of MMBtu per hour.

6.2 CT startup is defined as any operating period during which the CT is ramping up from less than normal load and ends when the earlier of the following events occurs:

6.2.1 CT normal load is achieved and normal operating temperatures have been reached in both the catalytic oxidation and SCR modules as indicated by the manufacturer's operating manual.

6.2.2 One of the following time limits have been reached, as applicable:

6.2.2.1 Three and one-half hours have elapsed since fuel was first introduced to the CT on a cold startup. A cold startup is any startup occurring after the CT has been shut down for 8 hours or more.

6.2.2.2 Two and three-fourth hours elapsed since fuel was first introduced to the CT on a warm startup. A warm startup is any startup occurring after the CT has been shut down for 4 hours or more but less than 8 hours.

6.2.2.3 Two hours have elapsed since fuel was first introduced to the CT on a hot startup. A hot startup is any startup occurring after the CT has been shut down for less than 4 hours.

6.3 CT shutdown is defined as any operating period during which the CT is ramping down from normal load and ends when fuel is no longer being supplied to the CT.

6.4 WEC shall not operate the CT at less than normal load except during startup and shutdown.

7 NO_x Emissions Limits for each CT/HRSG-DB

7.1 NO_x emissions from each CT/HRSG-DB exhaust stack shall not exceed:

7.1.1 2.0 parts per million NO_x on a dry volumetric basis (ppmdv), corrected to 15.0 percent (%) oxygen (O₂), averaged over any consecutive three hour period, except during CT startup and shutdown,

7.1.2 802 pound (lb) NO_x (as NO₂) per calendar day, and

7.1.3 122 tons NO_x (as NO₂) per calendar year.

7.2 Initial compliance with Condition 7.1.1 and 7.1.2 shall be demonstrated by measuring NO_x emissions in the exhaust stack pursuant to the following conditions:

7.2.1 Conduct an EPA Reference Method 20 performance test in accordance with an EPA-approved stack test protocol,

7.2.2 Conduct the performance test while both CT and DB are firing at the maximum firing rate, and

7.2.3 Conduct the performance test within 60 days after both CT and DB have achieved

the maximum firing rate but no later than 180 days after commencing commercial operation.

7.3 Continuous compliance with Conditions 7.1.1, 7.1.2, and 7.1.3 shall be demonstrated by measuring NO_x emissions in the exhaust stack pursuant to the following conditions:

- 7.3.1 Install and operate a continuous emission monitoring system (CEMS) satisfying the requirements of 40 CFR Part 75, and
- 7.3.2 Certify the CEMS pursuant to the requirements of 40 CFR Part 75 no later than 180 days after commencing commercial operation.

8 Daily NO_x Emissions Cap for all CT/HRSG-DB

- 8.1 In the event four CT/HRSG-DB are constructed and operating on a given day, Diamond may demonstrate compliance with Condition 7.1.2 by limiting combined NO_x emissions from the four CT/HRSG-DB to 3,208 lb NO_x (as NO₂) per calendar day.
- 8.2 In the event three CT/HRSG-DB are constructed and operating on a given day, Diamond may demonstrate compliance with Condition 7.1.2 by limiting combined NO_x emissions from the three CT/HRSG-DB to 2,406 lb NO_x (as NO₂) per calendar day.
- 8.3 In the event two CT/HRSG-DB are constructed and operating on a given day, Diamond may demonstrate compliance with Condition 7.1.2 by limiting combined NO_x emissions from the two CT/HRSG-DB to 1,604 lb NO_x (as NO₂) per calendar day.

9 Annual NO_x Emissions Cap for all CT/HRSG-DB

- 9.1 In the event four CT/HRSG-DB are constructed and operating during a given year, Diamond may demonstrate compliance with Condition 7.1.3 by limiting combined NO_x emissions from the four CT/HRSG-DB to 486 tons NO_x (as NO₂) per calendar year.
- 9.2 In the event three CT/HRSG-DB are constructed and operating during a given year, Diamond may demonstrate compliance with Condition 7.1.3 by limiting combined NO_x emissions from the three CT/HRSG-DB to 364 tons NO_x (as NO₂) per calendar year.
- 9.3 In the event two CT/HRSG-DB are constructed and operating during a given year, Diamond may demonstrate compliance with Condition 7.1.3 by limiting combined NO_x emissions from the two CT/HRSG-DB to 243 tons NO_x (as NO₂) per calendar year.

10 NH₃ Emissions Limit for each CT/HRSG-DB

- 10.1 NH₃ emissions from each CT/HRSG-DB exhaust stack shall not exceed 5.0 ppm_{dv}, corrected to 15.0 % O₂, averaged over any consecutive three hour period, except during CT startup and shutdown.
- 10.2 Initial compliance with Condition 10.1 shall be demonstrated by measuring NH₃ emissions in the exhaust stack pursuant to the following conditions:
 - 10.2.1 Conduct an EPA Conditional Test Method 27 performance test in accordance with an EPA-approved stack test protocol,
 - 10.2.2 Conduct the performance test while both CT and DB are firing at the maximum firing rate, and

- 10.2.3 Conduct the performance test within 60 days after both CT and DB have achieved the maximum firing rate but no later than 180 days after commencing commercial operation.
- 10.3 Continuous compliance with Condition 10.1 shall be demonstrated by measuring NH_3 emissions in the exhaust stack pursuant to the following conditions:
 - 10.3.1 Install and operate a CEMS satisfying the requirements of EPA Preliminary Performance Specification for NH_3 CEMS (PPS 001) and Appendix F to 40 CFR Part 60 (Appendix F), and
 - 10.3.2 Certify the CEMS pursuant to the requirements of PPS 001 and Appendix F no later than 180 days after commencing commercial operation.

11 CO Emissions Limits for each CT/HRSG-DB

- 11.1 CO emissions from each CT/HRSG-DB exhaust stack shall not exceed:
 - 11.1.1 2.0 ppm_{dv}, corrected to 15.0 % O_2 , averaged over any consecutive three hour period, except during CT startup and shutdown, and
 - 11.1.2 328 lb per hour.
- 11.2 Initial compliance with Condition 11.1.1 and 11.1.2 shall be demonstrated by measuring CO emissions in the exhaust stack pursuant to the following conditions:
 - 11.2.1 Conduct an EPA Reference Method 10 performance test in accordance with an EPA-approved stack test protocol,
 - 11.2.2 Conduct the performance test while both CT and DB are firing at the maximum firing rate, and
 - 11.2.3 Conduct the performance test within 60 days after both CT and DB have achieved the maximum firing rate but no later than 180 days after commencing commercial operation.
- 11.3 Continuous compliance with Conditions 11.1.1 and 11.1.2 shall be demonstrated by measuring CO emissions in the exhaust stack pursuant to the following conditions:
 - 11.3.1 Install and operate a CEMS satisfying the requirements of EPA Performance Specification 4A (PS 4A) of Appendix B to 40 CFR Part 60 and Appendix F, and
 - 11.3.2 Certify the CEMS pursuant to the requirements of PS 4A and Appendix F no later than 180 days after commencing commercial operation.

12 PM₁₀ Emissions Limits for each CT/HRSG-DB

- 12.1 PM₁₀ emissions from each CT/HRSG-DB exhaust stack shall not exceed 745 lb per calendar day.
- 12.2 Initial compliance with Condition 12.1 shall be demonstrated by measuring PM₁₀ emissions in the exhaust stack pursuant to the following conditions:
 - 12.2.1 Conduct a performance test in accordance with an EPA-approved stack test protocol incorporating the following methods:
 - 12.2.1.1 EPA Reference Method 5, 201, or 201A to capture filterable PM₁₀, and

- EPA Reference Method 202 to capture condensible PM₁₀, or
- 12.2.1.2 EPA Conditional Test Method 39.
- 12.2.2 Conduct the performance test while both CT and DB are firing at the maximum firing rate, and
- 12.2.3 Conduct the performance test within 60 days after both CT and DB have achieved the maximum firing rate but no later than 180 days after commencing commercial operation.
- 12.3 Continuous compliance with Condition 12.1 shall be demonstrated by calculating PM₁₀ emissions pursuant to the following conditions:
- 12.3.1 Install and operate a fuel flow metering system satisfying the requirements of 40 CFR Part 75 to measure the amount of fuel being combusting in each CT and DB,
- 12.3.2 Calculate PM₁₀ emissions based upon the measured fuel flow rate and EPA-approved PM₁₀ emission factors developed pursuant to Condition 11.3.3 and 11.3.4,
- 12.3.3 No later than 180 days after commencing commercial operation:
- 12.3.3.1 Develop PM₁₀ emission factors for EPA approval based upon stack test observations for each CT and DB, and
- 12.3.3.2 Certify the fuel flow metering system pursuant to the requirements of 40 CFR Part 75.
- 12.3.4 No later than five years after receiving EPA approval of PM₁₀ emission factors, develop new PM₁₀ emission factors for EPA approval based upon stack test observations for each CT and DB.
- 12.4 EPA will revise Condition 12.1 to lower the daily PM₁₀ emission limit if performance test results indicate lower than expected PM₁₀ emissions. The resultant emission limit shall reflect each CT/HRSG-DB's potential to emit while allowing for reasonable operational variability over the life of the CT/HRSG-DB. In no event shall the revised emission limit be less than the CT/HRSG-DB's potential to emit.
- 13 PM₁₀ Emissions Cap for all CT/HRSG-DB**
- 13.1 In the event four CT/HRSG-DB are constructed, Diamond may demonstrate compliance with Condition 12.1 by limiting combined PM₁₀ emissions from the four CT/HRSG-DB to 2,980 lb PM₁₀ per calendar day.
- 13.2 In the event three CT/HRSG-DB are constructed, Diamond may demonstrate compliance with Condition 12.1 by limiting combined PM₁₀ emissions from the three CT/HRSG-DB to 2,235 lb PM₁₀ per calendar day.
- 13.3 In the event two CT/HRSG-DB are constructed, Diamond may demonstrate compliance with Condition 12.1 by limiting combined PM₁₀ emissions from the two CT/HRSG-DB to 1,490 lb PM₁₀ per calendar day.
- 13.4 The PM₁₀ emissions caps in Conditions 13.1, 13.2, and 13.3 shall be revised downward consistent with the methodology outlined in Condition 12.4.

14 SO₂ Emissions Limit for each CT/HRSG-DB

- 14.1 SO₂ emissions from each CT/HRSG-DB exhaust stack shall not exceed 78 lb SO₂ per calendar day.
- 14.2 Initial compliance with Condition 14.1 shall be demonstrated by measuring SO₂ emissions in the exhaust stack pursuant to the following conditions:
 - 14.2.1 Conduct an EPA Reference Method 6C performance test in accordance with an EPA-approved stack test protocol,
 - 14.2.2 Conduct the performance test while both CT and DB are firing at the maximum firing rate, and
 - 14.2.3 Conduct the performance test within 60 days after both CT and DB have achieved the maximum firing rate but no later than 180 days after commencing commercial operation.
- 14.3 Continuous compliance with Condition 14.1 shall be demonstrated by calculating SO₂ emissions pursuant to the following conditions:
 - 14.3.1 Install and operate a fuel flow metering system satisfying the requirements of 40 CFR Part 75 to measure the amount of fuel being combusting in each CT and DB,
 - 14.3.2 Calculate SO₂ emissions based upon the measured fuel flow rate and a representative fuel sulfur content value provided by the natural gas provider,
 - 14.3.3 No later than 180 days after commencing commercial operation:
 - 14.3.3.1 Obtain from the natural gas provider a representative value for the sulfur content of the fuel being provided to WEC, and
 - 14.3.3.2 Certify the fuel flow metering system pursuant to the requirements of 40 CFR Part 75 no later than 180 days after commencing commercial operation.
 - 14.3.4 Obtain representative fuel sulfur content values from the natural gas provider at least annually.

15 VOC Emissions Cap for all CT/HRSG-DB

- 15.1 Combined VOC emissions from all CT/HRSG-DB shall not exceed 99 tons per 12-month period, calculated as the total mass of VOC constituents.
- 15.2 Continuous compliance with Condition 15.1 shall be demonstrated by calculating VOC emissions pursuant to Condition 15.3 or 15.4.
- 15.3 Calculate VOC emissions pursuant to the following conditions:
 - 15.3.1 Install and operate a monitoring system to meter CT and DB hours of operation no later than 180 days after commencing commercial operation, and
 - 15.3.2 Calculate VOC emissions based upon the elapsed time and the following emission factors:
 - 15.3.2.1 5.4 lb VOC / hour from the CT, except during startup,
 - 15.3.2.2 29.0 lb VOC / hour from the CT during startup, and

15.3.2.3 14.3 lb VOC / hour from the DB.

15.4 Calculate VOC emissions pursuant to the following conditions:

15.4.1 Install and operate a fuel flow metering system satisfying the requirements of 40 CFR Part 75 to measure the amount of fuel being combusting in each CT and DB,

15.4.2 Calculate VOC emissions based upon the measured fuel flow rate and EPA-approved VOC emission factors developed pursuant to Condition 15.4.3 and 15.4.4,

15.4.3 No later than 180 days after commencing commercial operation:

15.4.3.1 Develop VOC emission factors for EPA approval based upon stack test observations for each CT and DB, and

15.4.3.2 Certify the fuel flow metering system pursuant to the requirements of 40 CFR Part 75.

15.4.4 No later than five years after receiving EPA approval of VOC emission factors, develop new VOC emission factors for EPA approval based upon stack test observations for each CT and DB.

16 Visible Emissions Limit for each CT/HRSG-DB

16.1 Visible smoke emissions from each CT/HRSG-DB shall not exceed 5% opacity over a six-minute average, except during startup and shutdown.

16.2 Initial compliance with Condition 16.1 shall be demonstrated by visually determining the opacity of the exhaust stack pursuant to the following conditions:

16.2.1 Conduct an EPA Reference Method 9 performance test over an eighteen-minute period in accordance with an EPA-approved test protocol,

16.2.2 Conduct the performance test while both CT and DB are firing at the maximum firing rate, and

16.2.3 Conduct the performance test within 60 days after both CT and DB have achieved the maximum firing rate but no later than 180 days after commencing commercial operation.

16.3 Continuous compliance with Condition 16.1 shall be demonstrated by visually determining exhaust stack smoke emissions pursuant to the following conditions:

16.3.1 Conduct visual observations of emissions pursuant to EPA Reference Method 22,

16.3.2 Conduct visual observations once per calendar day while the CT is operating, and

16.3.3 If smoke is observed while conducting visual observations, immediately proceed to determine the opacity of the emissions over an eighteen-minute period pursuant to EPA Reference Method 9.

17 PM₁₀ Emissions Limit for each Cooling Tower

17.1 PM₁₀ emissions from each cooling tower shall not exceed 49 lb per calendar day. This

emission limit is achieved when the following two work practice standards are accomplished:

- 17.1.1 The drift eliminators have been installed in accordance with manufacturer's specifications to achieve a drift loss of 0.0005 percent of the recirculating water flow rate.
- 17.1.2 The cooling water 7-day average TDS content is less than 3,532 ppmw.
- 17.2 Initial compliance with Condition 17.1.1 shall be demonstrated no later than 180 days after the corresponding CT/HRSG-DB commences commercial operation pursuant to the following conditions:
 - 17.2.1 An expert in the field of cooling tower drift eliminators shall conduct an inspection of the assembled cooling tower drift eliminators,
 - 17.2.2 After conducting the inspection, the qualified expert shall author a report documenting the inspection and certifying the findings.
- 17.3 Continuous compliance with Condition 17.1.1 shall be demonstrated by maintaining the assembled cooling tower drift eliminators consistent with manufacturer's recommendation as described in the operating manual for the cooling tower. Compliance shall be documented by maintaining a log of maintenance activity performed on the cooling tower drift eliminators.
- 17.4 Initial compliance with Condition 17.1.2 shall be demonstrated no later than 180 days after the corresponding CT/HRSG-DB commences commercial operation pursuant to the following conditions:
 - 17.4.1 Measure the water's TDS content in accordance with the following procedures:
 - 17.4.1.1 Collect a grab sample of the cooling water at least once per day for seven consecutive operating days.
 - 17.4.1.2 Analyze each sample in accordance with Standard Methods, 18th Ed., Method 2540 C or EPA Method 160.1, at 40 CFR § 136.3.
 - 17.4.2 Record the sampling results.
- 17.5 Continuous compliance with Condition 17.1.2 shall be demonstrated by maintaining a cooling water TDS content of less than 3,532 ppmw pursuant to the following conditions:
 - 17.5.1 Collect a grab sample of the cooling water at least once per week.
 - 17.5.2 Analyze each sample in accordance with Standard Methods, 18th Ed., Method 2540 C or EPA Method 160.1, at 40 CFR § 136.3.
 - 17.5.3 Record the sampling results.
- 18 Startup, Shutdown, and Malfunction Procedure Manual
 - 18.1 Within 90 days of commencing commercial operation, WEC shall have prepared startup, shutdown and malfunction plans (SSMP) for CTs, DBs, and cooling towers. Each SSMP shall be designed to assist WEC minimize air pollutants emissions.
 - 18.2 Each SSMP shall be reviewed annually, and updated as needed.
 - 18.3 Copies of each SSMP shall be maintained on site and made available to EPA upon

request.

- 18.4 Emissions that result from a failure to follow the requirements of a SSMP may be considered credible evidence that emissions violations have occurred.

19 Recordkeeping

WEC shall maintain all records generated for the purpose of demonstrating compliance with the requirements of this permit. Records shall be maintained on site for at least five years.

20 Reporting

20.1 Monitoring data shall be submitted quarterly within 30 days of the end of each calendar quarter.

20.2 The format of the data shall be consistent with EPA's Acid Rain program reporting requirements. The Acid Rain program reporting format extends to all monitoring data, including data required by this permit but not EPA's Acid Rain Program.

20.3 For each occurrence of monitored or calculated emissions in excess of the permitted limit, the quarterly emissions report shall include the following:

20.3.1 The time and duration of the occurrence,

20.3.2 The magnitude of the emission,

20.3.3 The probable cause, and

20.3.4 Corrective actions taken or planned.

20.4 WEC shall notify EPA in writing at least thirty days prior to:

20.4.1 Initial start-up of any permitted emissions unit for operational testing and manufacturer's certification purposes,

20.4.2 Commencing commercial operation,

20.4.3 The date any emission testing required by this permit will be performed, and

20.4.4 The date(s) CEMS performance testing will be performed.

21 Termination

This approval shall become invalid if construction of WEC is not commenced within eighteen (18) months after the effective date of this permit to construct, or if construction of the facility is discontinued for a period of 18 months, unless EPA extends the 18 month period upon a satisfactory showing that an extension is justified, pursuant to 40 CFR 52.21(r)(2).

22 Permit Revisions

WEC may request that this permit be revised for good cause. The nature and extent of the request will determine the process under which the permit may be revised.