MARCH 2001
REVISED FACT SHEET
Arizona Public Service Company - Four Corners Power Plant
NPDES Permit No. NM0000019

I. Introduction

The existing National Pollutant Discharge Elimination System (NPDES) permit issued to the Arizona Public Service Company (APS) for the Four Corners Power Plant on December 31, 1993, expired on December 31, 1998. On June 16, 1998, APS applied to the United States Environmental Protection Agency, Region 9 (EPA) for renewal of APS' permit for discharge of wastewater to waters of the United States.

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EPA received a letter from Mr. John Denman of APS dated October 2, 2000, indicating that ownership of the Four Corners Power Plant would be transferred to Pinnacle West Energy Corporation (PWEC) as of January 1, 2001. During a December 21, 2000 telephone conversation, Mr. Walling informed Linh Tran of EPA that the transfer had been delayed. APS will retain responsibility for the permit until PWEC assumes such responsibility.

II. Background

The APS Four Corners Steam Electric Generating Station (plant) is located in San Juan County about 20 miles southwest of Farmington, New Mexico. The plant is located on the Navajo Indian Reservation and is partially owned and operated by APS. The plant's total generation capacity is 2,040 megawatts, and the low-sulfur coal burned at Four Corners comes from the adjacent Navajo Mine, operated by BHP Minerals. The cooling water for the five generating units comes from the man-made Morgan Lake, adjacent to the plant. The 1200-acre lake receives its water from the San Juan River at an average rate of about 28 million gallons per day. The plant provides electrical power to utilities in Arizona,

California, Texas, and New Mexico.

APS has applied for authorization to continue to discharge from the following outfalls:

Outfall No. 001
Cooling Pond Discharge

Internal Outfall Nos.:
01A Condenser Cooling Water Discharge
01E Combined Waste Treatment Pond Discharge
01B Chemical Metal Cleaning Wastewater

Outfall No. 001 is the discharge of Morgan Lake (Cooling Pond) water to the No Name Wash, a tributary of the Chaco River, which in turn drains to Segment 2-401 of the San Juan River. Internal Outfall No. 01B is not in use. The plant currently disposes chemical metal cleaning wastewater to its fly ash pond pursuant to the Dietrich exemption under the Resource Conservation and Recovery Act, but APS wishes to retain Outfall No. 01B for potential future use.

On January 8, 1996, APS submitted a request for a permit modification to include a limitation for oil and grease for Outfall No. 01A. APS offered the following explanation for its request. Water flows to the plant from the man-made Morgan Lake into the Condenser Cooling Water Inlet Canal (Inlet Canal). It is then pumped through the main condensers of the five generating units that drain to the Condenser Cooling Water Discharge Canal (Discharge Canal). The Discharge Canal discharges back to Morgan Lake (i.e., Outfall No. 01A). Water is supplied from the Inlet Canal to several once-through non-contact oil coolers that cool the oil for various pieces of equipment throughout the plant. The cooling water from these coolers also flows to the Discharge Canal. These oil coolers do not discharge oil to the Discharge Canal during normal operation. However, it is possible for these oil coolers to develop a leak that could allow oil to enter the cooling water. The plant periodically inspects and tests these coolers to prevent leaks. To ensure that oil does not enter Morgan Lake if an oil cooler leak occurs, the plant installed two oil absorbent booms across the Discharge Canal.

As a result of several oil discharges entering the Discharge Canal on June 7 and August 29, 1996, APS submitted several plant operating changes and plant modifications to minimize the risk of further oil discharges to the canal. The physical plant modifications included: replacing old oil cooling units with new ones; re-routing some equipment oil cooler discharges with smaller flows to the Combined Waste Treatment Pond (Outfall No. 01E),

instead of discharging directly to the Discharge Canal; improving the oil-water separator; and installing additional oil spill containment berms.

APS conducted biomonitoring on Outfall No. 01A in 1988 and 1989 and found that no chronic or acute toxicity occurred in undiluted effluent during the testing period. As allowed in the previous permit, biomonitoring was then discontinued. However, pursuant to current EPA policy, the permit requires chronic toxicity monitoring at Outfall No. 01A.

EPA has determined that there are no threatened or endangered species in the discharge area. As a result, the permit does not contain any requirements specific to the protection of threatened or endangered species.

Any sampling and monitoring under the permit shall be performed at Outfall No. 001, and Internal Outfall Nos. 01A, 01E, and 01B.

III. Basis of Permit Requirements

The discharge limitations are based on 40 CFR Part 423 - Steam Electric Power Generating Point Source Category.

IV. Determination of Effluent Limitations, Monitoring, and Reporting Requirements

A. Outfall No. 001 - Cooling Pond Discharge

The permit sets flow (14.7 million gallons per day), temperature (32.2°c monthly average and 35°c daily maximum), and pH limits (no less than 6.0 or greater than 9.0 standard pH units). Temperature must be monitored continuously and flow must be monitored on a weekly basis. Monitoring for pH and total dissolved solids is required on a monthly basis. Total dissolved solids monitoring is required for discharges to tributaries of the San Juan River. These requirements are consistent with those of the previous permit.

B. Internal Outfall No. 01A - Condenser Cooling Water Discharge

This internal outfall meets the definition in 40 CFR 423.11(g) for "once-through cooling water," which is water passed through the main cooling condensers in one or two passes for the purpose of removing waste heat. As once-through cooling water, Outfall No.

01A is subject to limitations outlined in 40 CFR 423.13(b)(1) and 423.13(b)(2) for chlorine.

Intermittent chlorination is used as a system biocide in once-through cooling waters. The regulations at 40 CFR Part 423 limit chlorination duration and frequency (two hours/unit/day) to protect the receiving water from chlorine toxicity. As described in Section II. Background above, the discharge from this outfall has been tested for toxicity. The permit limits chlorine residual in the discharge based on the calculations described below.

Total Residual Chlorine: In accordance with 40 CFR 423.13(b)(1), for any plant with a total rated electric generating capacity of 25 or more megawatts, the quantity of pollutants discharged in once-through cooling water from each discharge point shall not exceed the quantity determined by multiplying the flow of once-through cooling water from each discharge point times the daily maximum concentration of 0.2 milligrams per liter (mg/l). The total maximum flow from all units during periods of chlorination (571.6 million gallons per day) is used in the following calculation:

$$\frac{571.6 \text{ million gal}}{\text{day}} \times \frac{0.2 \text{ mg}}{\text{l}} \times \frac{8.345 \text{ lb/million gal}}{1 \text{ mg/l}} = 954 \text{ lbs/day}$$

Oil and Grease: Daily maximum and 30-day average concentration limits for oil and grease are established for Outfall No. 01A at 20.0 and 15.0 mg/l, respectively.

Other Requirements: The pH restricted range is 6.0 to 9.0 standard pH units. Monthly chronic toxicity monitoring is required, and APS may petition for a reduced measurement frequency after the first year. Flow rates must be calculated. All of the above requirements, with the exception of oil and grease, are consistent with those in the previous permit for Outfall No. 01A.

C. Outfall No. 01E - Combined Waste Treatment Pond Discharge

A large component of the Outfall No. 01E discharge is bottom ash transport water, with low-volume wastewater constituting a smaller component of the discharge. (See 40 CFR 423.11(f) for definition of bottom ash.) As such, Outfall No. 01E is regulated under 40 CFR 423.12(b)(4) for total suspended solids (TSS) and oil and grease. The permit sets daily maximum concentration limits of 100.0 and 20.0 mg/l for TSS and oil and grease, respectively. Daily average concentration limits are 30.0 and 15.0 mg/l for TSS and oil and grease, respectively. In addition, the permit restricts pH to a range of 6.0 to 9.0 standard pH units, and flows

must be estimated. These requirements are consistent with those of the previous permit.

D. Outfall No. 01B - Chemical Metal Cleaning Wastewater

Outfall No. 01B meets the definition of chemical metal cleaning waste under 40 CFR 423.11(c) and is regulated as such under 40 CFR 423.12(b)(5) and 423.13(e). Total suspended solids and oil and grease are subject to the same limits as those for Outfall No. 01E above. In addition, limits for copper and iron are each set at 1.0 mg/l for both the daily maximum and the daily average limits. The permit also restricts pH to a range of 6.0 to 9.0 standard pH units. These requirements are consistent with those of the previous permit.

E. Reporting

The permit requires all discharge data to be summarized and reported monthly. If there is no discharge for the month, APS must indicate "zero discharge." Monitoring reports are due by the 28th of the following month. APS shall submit to the Regional Administrator duplicate signed copies of all reports required by the permit.

F. General Standards

The permit sets general standards that are based on the requirements of the Clean Water Act. These general standards are set forth in Section B. General Discharge Specifications of the permit.

V. Permit Reopened

At this time, there is no reasonable potential to establish any other water quality-based limits. If any monitoring indicates that the discharge causes, has the reasonable potential to cause, or contributes to excursions above applicable water quality criteria, the permit may be reopened for the imposition of water quality-based limits and/or whole effluent toxicity limits. In addition, the permit may be modified in accordance with the requirements set forth at 40 CFR Part 122 and Part 124.

VI. Endangered Species Act

EPA has determined that discharge in compliance with the permit will have no effect on threatened or endangered species.