United States Environmental Protection Agency
Region9
Technical Support Document

Salt River Project – Navajo Generating Station
Administrative Amendment
August 2015

Tribal NSR Permit: T-0004-NN
(See also, PSD Permit No. AZ 08-01A)

Project Description
On May 1, 2015 we received an application for an administrative permit amendment from Salt River Project for the addition of equipment at Navajo Generating Station to comply with the Mercury and Air Toxics Standards (MATS). Additional information was also received on August 19, 2015. The project includes the addition of a new calcium bromide application system and a new powdered activated carbon (PAC) injection system. The addition of this equipment also increases truck traffic at NGS for the routine delivery of calcium bromide and PAC. This project results in emissions increases of particulate matter (PM, PM_{10}, and $PM_{2.5}$) from the PAC system's storage silos and fugitive truck traffic emissions for deliveries of calcium bromide and PAC. As described below, this project qualifies as an administrative permit amendment under the Tribal Minor NSR Rule at 40 CFR 49.153(a)(2) and 49.159(f).

Calcium Bromide Application
The calcium bromide application system will consist of a 60,000 gallon storage tank, and three 4,500 gallon day tanks, and several pumping skids for transferring the calcium bromide. Liquid calcium bromide will be delivered by truck to the 60,000 gallon storage tank, and then transferred as needed to the day tanks via transfer pumps. From the day tanks, calcium bromide will be applied to the coal directly at each existing coal pulverizer feeder for the boilers.

Calcium bromide is a non-volatile liquid and no air emissions are expected from the storage tanks or during the application to coal. However, the application of calcium bromide can help to oxidize elemental mercury in coal, which makes it easier to remove from particular matter control devices.

PAC Injection
The PAC injection system will consist of two 40 ton storage silos, each equipped with a baghouse, two feed tanks containing PAC slurry, and various pumping skids for transferring the PAC slurry. The maximum flowate through each baghouse is 1,200 actual cubic feet per minute (acfm).

PAC will be truck delivered into the main storage silos for bulk storage. From the storage silos, the PAC will be mixed with water creating a PAC slurry and subsequently transferred to the feed tank. PAC slurry will then be fed to each absorber as needed.

Particulate matter emissions from the process are generated from the unloading of PAC into the storage silos. A baghouse to capture and control these particulate emissions is integral to the storage silo and thus will be operated at all times. Emissions from the baghouses are based on a conservative emission factor of 0.01 gr/scf. Manufacturer's emissions information provided by the applicant provides a guarantee of 0.00088 gr/scf. Because the baghouses for these silos are integral to the process they are taken into consideration in calculating

potential emissions. Table 1 below shows that the increase in potential emissions is well below the minor NSR thresholds.

Additional Truck Traffic

In addition, the delivery of calcium bromide and PAC to the NGS will cause an increase in fugitive particulate matter emissions from increased truck traffic. Emission calculations are based on AP-42 information. The applicant included an assumed 75% control efficiency for road watering. However, we did not include this reduction in our analysis. There is a maximum of 30 vehicle miles traveled (VMT) per year for PAC deliveries and a maximum of 365 VMT per year for calcium bromide deliveries.

Summary of Emission Increases

Table 1 below summarizes the emission increases from this project and provides the applicable permitting thresholds for minor and major NSR. The NGS is located in an area that is attainment for all of the National Ambient Air Quality Standards. Therefore, this table reflects the permitting thresholds applicable in attainment areas. For major NSR, the thresholds under the Prevention of Significant Deterioration (PSD) program are provided. Table 1 demonstrates that this project is below both the minor and major NSR permitting thresholds. Table 2 shows the potential to emit for each new emissions unit. (See also, Region 9 Emission Calculations Spreadsheet – August 2015.)

Table 1 Mercury Emissions Control Project Potential to Emit

	Modification PTE (TPY)	**Minor NSR Thresholds (TPY)**	**PSD Thresholds (TPY)**
CO	0	10	100
NOx	0	10	40
SO2	0	10	40
VOC	0	5	40
PM	**2.2**	**10**	**25**
PM10	**1.2**	**5**	**15**
PM2.5	**0.9**	**3**	**10**
Lead	0	0.1	0.6
Fluorides	0	1	3
Sulfuric acid mist	0	2	7
Hydrogen sulfide	0	2	10
Total reduced sulfur	0	2	10
Reduced sulfur compounds	0	2	10
CO2e	0	NA	75,000

Table 2 Potential to Emit for Each New Emissions Unit

Emission Unit	**$PM_{2.5}$ (TPY)**	**PM_{10} (TPY)**	**PM (TPY)**
Truck Traffic PAC Deliveries	0.0044	0.0435	0.1688
Truck Traffic Calcium Bromide Deliveries	0.0286	0.2860	1.1087
PAC Storage Silo A	0.4505	0.4505	0.4505
PAC Storage Silo B	0.4505	0.4505	0.4505
Totals	**0.9**	**1.2**	**2.2**

Permitting Requirements under the Tribal Minor NSR Rule

The Tribal Minor NSR Rule requires projects at major sources that cause an emissions increase above an emissions unit's existing emissions limit to obtain a permit revision prior to making the change. See 40 CFR 49.153(a)(2). Where the change is not otherwise subject to review under major NSR or Tribal Minor NSR, the increase may be accomplished through an administrative permit revision as provided in 40 CFR 49.159(f)(v). Based on the information submitted in SRP's application this project qualifies as an administrative amendment because all of the emission increases shown in Table 1 are below the minor NSR thresholds.

Revision to Existing PSD Permit

Currently, NGS has a PSD permit for its Low NOx Burner Project that was initially issued in 2008. It is Region 9's practice to include the requirements from the PSD and Tribal Minor NSR program in a single NSR permit document. As such, we are revising NGS's existing PSD permit, No. AZ 08-01A, to add the Tribal Minor NSR requirements of this action. NGS's Tribal Minor NSR permit number is T-0004-NN. All PSD conditions applicable to NGS remain unchanged by this action. In addition, we also added the email address for Region's 9 Air & TRI Enforcement Section to Section XI (Agency Notifications) of the permit. We consider this an administrative change pursuant to 40 CFR 49.159(f)(vi).