STATEMENT OF BASIS

Tarmac America, LLC
Titan America Pennsuco Complex
Facility ID No.: 0250020
Medley, Miami-Dade County

FINAL Title V Operation Permit Renewal
DEP File No.: 0250020-018-AV

This Title V Air Operation Permit Renewal, No. 0250020-018-AV is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210 and 62-213. The above named permittee is hereby authorized to operate the facility shown on the application and approved drawing(s), plans, and other documents, attached hereto or on file with the permitting authority, in accordance with the terms and conditions of this permit.

The purpose of this permit is for the renewal of the Title V Air Operation Permit No. 0250020-011-AV. This permit will incorporate the terms and conditions of the air construction permit 0250020-016-AC for the modernized dry process Portland Cement Plant, the cement plant production increase Permit 0250020-017-AC/PSD-FL-360 along with the permit modifications contained in Permit 0250020-019-AC/PSD-FL-360A and the air construction permit 0250020-014-AC for the Concrete Block Plant (E.U. 024). This permit will also include a Compliance Assurance Monitoring Plan (Appendix CAM attached) and a Compliance Plan (Appendix CP-1 attached) as described below. It also reaffirms the applicability of the major provisions of 40CFR63, Subpart LLL, National Emission Standards from the Portland Cement Manufacturing Industry as a new kiln at a brownfield facility.

This renewal permitting action recognizes all the intended revisions stated in the REVISED DRAFT Title V Permit No. 0250020-013-AV distributed on September 28, 2004 (now withdrawn) such as the shutdown of Kilns and Coolers No. 1 & 2, the slag dryer, the cement dust insufflation system and their support equipment.

This FINAL Title V Operation Permit Renewal is in a completely different format compared with the original Title V Permit 0250020-009-AV (0250020-002-AV) and the permit revision 0250020-011-AV.

PRESENT DESCRIPTION OF THE FACILITY

Tarmac America LLC operates the Titan America Pennsuco Complex in Medley, Miami-Dade County. The facility consists of:

- A dry process portland cement plant that primarily uses coal and petroleum coke as fuels and limestone and aggregate supplied from the Aggregate Plant and is permitted to produce 2,190,000 TPY of clinker and is capable of producing approximately 2,400,000 TPY of portland cement;
- An aggregate plant permitted to process 14,560,000 tons per year (TPY) of raw material from on-site limestone quarry and shipments received from other sources;
- Two 130 cubic yards per hour (244 tons per hour) concrete batch ready mix plants; and
- One 5,500 blocks per hour concrete block plant.

CEMENT PLANT DESCRIPTION

Following is a more detailed description of the cement plant within the facility. The portland cement plant includes the following main components:

- An 8-acre, 95-foot high “A-frame” raw materials storage building (MSB);

- Raw material and fuel piles stored outside and inside of the MSB. The piles consist of blended limestone, alumina source (e.g. bauxite), iron source (e.g. mill scale), high lime limestone, coal, and petroleum coke;
- Materials handling equipment including bridge reclaimers, stackers, belt conveyors, conveyor from the MSB to the raw mill, control system/analyzer, etc.;
- An F.L. Smidth nominal 400 dry tons per hour (TPH) Model 52/4 Raw mill and F.L. Smidth nominal 15,000 ton blending silo;
- An F.L. Smidth Rotax kiln that is 65 meters long and 5 meters in diameter;
- An F.L. Smidth 5-stage "Low NO_X" in-line calciner (ILC) with sequenced fuel and air introduction and meal staging;
- An F.L. Smidth 4x5 cross bar clinker cooler;
- An F.L. Smidth Airtec ten-compartment baghouse with 690 bags per compartment;
- An F.L. Smidth nominal 35 TPH coal (and petroleum coke) mill;
- Six finish mills including a new F.L. Smidth finish mill; and
- Cement storage, truck/rail loadout and packhouse.

KEY PERMITS RELATED TO CHANGES AT THE FACILITY AND CEMENT PLANT

The air construction permits related to the modernization of the cement plant are listed below. They are the primary basis for the changes between the Initial Title V Operation Permit and this Title V Operation Permit Renewal.

- Construction Permit 0250020-008-AC issued October 21, 1999: Initial authorization.
- Construction Permit 0250020-010-AC issued May 1, 2001: Reauthorization as a larger project after purchase by Titan. Update netting.
- Construction Permit 0250020-012-AC issued January 25, 2002: Increase hours of operation for the Aggregate Plant and replace hourly and daily production limits with monthly and yearly limits. These changes and others were incorporated into a Title V Operation Permit Revision No. 0250020-011-AV dated March 26, 2002.
- Construction Permit 0250020-014-AC issued September 20, 2002: Construction of 5,500 blocks per hour concrete block plant that replaced two smaller block plants.
- Construction Permit 0250020-016-AC issued May 31, 2005: Keep Finish Mill 1 and upgrade Finish Mill No. 3. Update netting calculations.
- Construction Permit 0250020-017-AC issued December 2, 2005: Increase production. PSD Review for CO (2 lb/ton clinker). New emission limits of 2.17 NO_X and 0.50 lb SO_2/ton clinker. Establish Fugitive Emissions Control Plan. Update netting calculations.
- Construction Permit 0250020-019-AC issued October 13, 2006: Reactivate Finish Mill 2 as a backup when any other Finishing Mill is unavailable. Update netting calculations.

COMPLIANCE ASSURANCE MONITORING (CAM) PLAN

The facility is subject to a particulate matter Compliance Assurance Monitoring Plan (CAM) for the main air pollution particulate control device (APCD) and stack for the kiln/cooler/raw mill/coal mill system.

The combined exhaust from raw mill, clinker cooler, kiln and coal mill is processed through a series of cyclones and then the large baghouse prior to exiting the main stack. That baghouse has a capacity greater than 500,000 actual cubic feet per minute. All dust from those cyclones and the baghouse

constitute the feed to pyroprocessing. Particulate emissions from the main stack are subject to at least four emissions limiting standards including:

- A visible emissions limitation of 10 percent opacity;
- The total of the NESHAP/MACT (40CFR63, Subpart LLL) particulate emission limit of 0.4 lb/ton of feed. This is comprised of 0.3 and 0.1 lb/ton feed for the kiln and clinker cooler respectively;
- The guaranteed specification from the supplier of 0.125 lb/ton of feed; and
- The permitted PSD avoidance limits of 0.063 and 0.053 lb/ton of feed for PM and PM_{10} respectively.

The initial compliance tests conducted in November 2004 indicated PM emissions of 0.021 and 0.028 lb/ton feed with the raw mill up and down respectively. Typical observer-based visible emissions and COMS readings were zero.

Compliance tests conducted in December 2005 indicated PM emissions of 0.037 lb/ton of feed (70% of the PM_{10} limit) with the raw mill up and concurrent COMS-based readings averaging 3%.

For reference, the permitted process limits equate to approximately 3,650,000 tons per year of feed. The permitted emission limits are roughly 100 TPY. Therefore the overall particulate collection efficiency of collection devices including cyclones following the raw mill and the main baghouse is on the order of 99.997%. Assuming that the main baghouse collects approximately 5% of all feed after initial milling (and collection by the cyclones), then that device would have to operate at an efficiency of approximately 99.95%.

While all of the function of the cyclones and much of the function of the baghouse is for the purpose of collecting the feed needed for the process, the Department believes that the baghouse must be operated to achieve greater PM/PM_{10} collection than necessary solely for process purposes. In other words, the Department believes that if the equipment were designed solely as a process component, emissions would be in excess of the permitted emissions limits. Therefore, a CAM plan applies.

This argument is further buttressed by the fact that the PM/PM_{10} emission limits are the lowest of any kiln known to the Department that is located in the United States. The equipment will be operated at emission limits less than guaranteed by the supplier to insure that PSD is not triggered by all of the projects related to the recent plant modernization. Therefore, it is important to insure continuous compliance with the PM/PM_{10} limitations through a CAM Plan.

A CAM Plan has been included in the FINAL Title V Operation Permit Renewal as Appendix CAM and is based on action plans that are triggered by COMS opacity measurements greater than 5%. Because of the relatively short period of operation to-date and the relatively good performance (as indicated by PM/PM_{10} and opacity measurements), the Department did not consider other possible indicators that may be related to the function of the baghouse such as differential pressure drop. The Department may re-examine the indicators based on the frequency of excursions in the future.

It is possible that in the future other process variables may be identified and used in conjunction with opacity for this kiln/cooler/raw mill/coal mill system particulate control device within this Compliance Plan. These variables might include differential baghouse pressure drop or fan amperage.

<u>Control Equipment not subject to CAM</u>

The product clinker and interground additions (such as gypsum) are processed in the finish mills. All resulting material (the fine cement product) is swept and recovered in the filtration devices. The obvious purpose of those devices (baghouses) is to recover the product. Therefore, they are not subject to a CAM Plan.

COMPLIANCE PLAN

The purpose of the Compliance Plan (Appendix CP-1 attached) is to set appropriate requirements and milestones for Titan to apply for the required air construction permits for the second concrete batch ready mix plant, the final equipment configuration (refer to Table I) of the Aggregate Plant, and to complete the 106th Avenue improvement project that is a requirement of the Facility Dust Improvement Plan. Specifically:

- The concrete batch ready mix portion of the facility contains two rather than one plant. The second plant was added in 2003 to support construction of the cement plant modernization project. They intended to move the plant to Hollywood once construction of the new kiln line was complete. However they sold the property in Hollywood and now wish to keep the plant at the Pennsuco facility.
- The Aggregate Plant contains numerous emissions points. Some were not accurately noted in the preliminary DRAFT documents although the listing is based on records provided by Titan and a Table appended to an earlier Air Construction Permit.
- Operation of the Concrete Block Plant is limited to 6,240 hours per year. Titan wishes to be able to operate the plant 8,760 hours per year.

Titan also advised the Department that the 106th Avenue improvements under the Facility Dust Improvement Plan have not yet been completed.

The Department advised Titan that the three main items they identified require air construction permits. Titan agreed to submit applications to DERM for the necessary permits. The Department advised Titan and DERM that a Compliance Plan, requiring that Titan obtain permits for the first two items, will be made a part of the FINAL Title V Operation Permit Renewal.

HAZARDOUS AIR POLLUTANTS (HAPS) AND UNREGULATED EMISSIONS UNITS

Based on the Title V Air Operation Permit Renewal application received April 28, 2005 this facility is a major source of hazardous air pollutants (HAPs). Also included in this Title V permit are miscellaneous unregulated emissions units and/or activities.