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NON-CONFIDENTIAL
Report of the Phase II Plant Visit
to Du Pont's Acrylic Fiber May Plant
in Camden, South Carolina, Regarding
the Development of New Source Performance
Standards for the Synthetic Fibers Industry

I. Purpose

The purpose of the plant visit was to obtain process, operating and emissions data regarding the dry spun acrylic fibers segment of the synthetic fibers industry. The information obtained will serve as background data in the formulation of an emission testing program for use in the development of "new source performance standards" (NSPS) for the synthetic fibers industry.

II. Place and Date

Du Pont Corporation
May Plant
Camden, South Carolina

August 8, 1980/Revised Version

III. Attendees

<u>Name</u>	<u>Affiliation</u>
Stoney Campbell	Du Pont
Larry Deas	Du Pont
C. Reid Earnhart	Du Pont Environmental Control Process Supervisor
Kenneth C. Lillard	Du Pont Environmental Control Senior Research Engineer
Jake F. Watson	Du Pont Safety, Health, and Environmental Affairs Supervisor
Winton Kelly	EPA:EMB

Gregory Lathan	Pacific Environmental Services, Inc.
Richard Berard	Pacific Environmental Services, Inc.
Michael Hartman	TRW
Robert F. Jongleux	TRW

IV. Discussion

Prior to the plant tour, a meeting was held among various Du Pont personnel and the EPA/PES/TRW project team. Jake F. Watson, Du Pont Environmental Affairs Supervisor, initiated the meeting with a discussion of the rationale, from DuPont's perspective, for the emission point source testing program. He went on to articulate two areas of interest which he felt to be relevant to the testing program: The gathering of basic data to determine those specific analytical methods which would aid in the establishment of emission standards and, secondly, the collection of other data for the possible requirement of additional capture devices.

Du Pont representatives then inquired as to the reasoning for the inclusion of acrylonitrile (AN) in the testing program. Winton Kelly, representing the Environmental Protection Agency, Emission Measurement Branch, cited the on-going development of new source performance standards (NSPS) for the synthetic fibers industry along with the subsequent classification of acrylonitrile (AN) as a hazardous pollutant. As a result, EPA now requires, as a general rule, testing for AN (and other hazardous air pollutants) whenever emission tests for other pollutants are conducted at potential AN sources.

Du Pont emphasized the fact that acrylonitrile (AN) was the basic raw material for the polymer and that from the spinning process on, all processes were acrylonitrile-free. In addition, Greg Lathan and Winton Kelly confirmed that the dimethylformamide (DMF) emission analyses would encompass the spinning and post-spinning operations only. In response to Du Pont's inquiry regarding the necessity of obtaining grab samples, Winton Kelly stated these samples would enable TRW technicians to ascertain correct sample sizes along with additional technical data under laboratory conditions.

Messrs. Lillard and Watson then proceeded to present a brief overview of the production line process emission points. It was noted that the spinning enclosure, as distinct from the spinning cell, is the source of vapor laden air to the scrubber. The solvent-laden spinning cell emissions are routed to a condenser where the solvent is recovered in liquid form and transferred to a holding tank. The condensed solvent is then routed to a distillation column where the dimethylformamide is separated from the water phase.

Jake Watson indicated that a single scrubber handled all vapor-laden exhaust streams from the spinning machines. He also pointed out that each spinning machine's productivity rate differed depending on the denier and other productivity related aspects.

Greg Lathan indicated that in order to make a determination of the costs associated with any additional enclosures which may be necessary, a model plant is in the process of being finalized by PES. Winton Kelly, augmenting the earlier discussion regarding the rationale for testing, added that estimates of Du Pont's control efficiencies would be needed in the event that any of the emission points required additional capture devices. These estimates would serve to accurately forecast how such control devices would impact control and production costs.

Du Pont officials inquired as to the possibility of the new source performance standard (NSPS) data presently being collected applying to existing plant facilities with regard to control technique guidelines (CTG), prevention of significant deterioration (PSD), and State implementation plans (SIP). Winton Kelly responded in the affirmative regarding the CTG and SIPs. Du Pont stressed that in regard to the CTG, retrofitting is extremely costly and would therefore present an economic problem. (It was later determined that the CTG would not apply at this time.)

V. Plant Tour

Since potential VOC emission source testing points were of overriding concern on this visit, a cursory tour of the spinning and post-spinning operations was made, with emission points being stressed. The processes viewed included spinning, piddler and waste, creel, wash-draw, cooler, crimper cooler, piddler, and steam shoe operations, fiber dryer, and

final finishing processes where applicable. In addition, solvent recovery system vent streams were identified for all operations.

Exterior Building. Visible on the roof of the building were numerous fans, vents, blowers, and ventilation systems. The relevant emission test points of interest were examined. These included all exhausts which manifold from the previously mentioned post-spinning processes. The spinning machine emissions all are vented to the single scrubber. After viewing the scrubber, it was decided that two (2) sample points would be selected; one (1) prior to emission entry and one (1) after scrubbing. This methodology would enable an efficiency rate to be calculated for the scrubber.

VI. Final Discussion

Upon completion of the plant tour, a brief discussion was conducted among representatives of the project team and Du Pont. Final methodology for the sample testing was agreed upon including access to testing points, test facilities, cost considerations, and sample run time intervals, along with projected test period dates.

VII. Action To Be Taken

1) TRW (in conjunction with EPA) agreed to provide Du Pont with a detailed description of the materials and projected costs associated with the emission point source test plan.

2) TRW (in conjunction with EPA) agreed to provide Du Pont with proposed test dates as soon as these dates could be finalized.

3) PES will oversee the progress toward the actual testing and will prepare to collect process and in-house test data during the emission testing.