



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Metropolitan Boston - Northeast Regional Office

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JUN 17 1999

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Acting Commissioner

Mr. William Smith
The Gillette Company
Andover Manufacturing Center
30 Burt Road
Andover, MA 01810-5989

RE: ANDOVER - Metropolitan
Boston/Northeast Region
310 CMR 7.18(20)-Emission
Control Plan
310 CMR 7.18(17)-Reasonably
Available Control Technology
Appl. No. MBR-92-IND-053
Transmittal No. 60574
**EMISSION CONTROL
PLAN FINAL APPROVAL**

Dear Mr. Smith:

The Metropolitan Boston/Northeast Region of the Department of Environmental Protection (DEP), Bureau of Waste Prevention, has reviewed your application for approval of your Emission Control Plan (ECP) for the control of all volatile organic compound (VOC) emissions from your facility. This application has been submitted to describe how "Reasonably Available Control Technology" (RACT) will be implemented for the Andover Manufacturing Center (AMC) of The Gillette Company (Gillette), located at 30 Burt Road in Andover, Massachusetts. The RACT ECP involves the manufacturing and packaging of personal care products, the storing and transferring of chemical components, and the maintenance of associated equipment located at the facility. This application for approval of the ECP bears the signature of Terance C. Fox, Plant Manager, as the designated legally responsible company official for Gillette.

This RACT review disclosed that equipment was installed after September 1982, which required a Best Available Control Technology (BACT) review under Regulation 310 CMR 7.02. The equipment included miscellaneous tanks (emitting less than 1 ton per year per tank), and the "Sepro Line" which was installed in 1983 (see discussion on page 33 of the 12/93 RACT document; and AMC's letter to DEP dated April 13, 1989 on this Sepro Line). The tanks that were installed without 7.02 approval are presently considered exempt by 7.02 regulations, since they emit insignificant levels of VOC (less than one ton per year per tank).

These tanks were evaluated in the RACT plan, and are considered to be in compliance with both BACT and RACT requirements. These miscellaneous tanks will be considered

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approved as part of this RACT plan, and emissions from these tanks shall be included in AMC's facility-wide VOC emission restriction.

According to the 1991 Source Registration Forms, the Sepro Line emitted 0.29 tons in 1991. Production on this line has increased, and significant future growth is possible due to product changes. In 1994, the line emitted 7.5 tons of VOC, according to the facility's Emission Statement. The Proposed Emission Control Plan Final Approval, dated June 14, 1995, required AMC to submit a 310 CMR 7.02 Plan Approval Application for the Sepro Line by September 1, 1995. AMC submitted the required application and received a 310 CMR 7.02(2) Conditional Best Available Control Technology (BACT) Approval (No. MBR-96-IND-045) from the Department on March 7, 1997. Said BACT Approval, issued by the Department, requires the use of a permanent total enclosure (PTE) and a thermal oxidizer for the Sepro line, having a minimum VOC destruction efficiency of 98 percent by weight. Compliance testing was performed on the Sepro Line control equipment on April 7, 1997. The results of the compliance testing show that the Sepro Line control equipment is in full compliance, having a VOC destruction efficiency of greater than 98 percent by weight. Please note however that no credit is given as part of this Single Source Emission Control Plan Final RACT Approval for emission reductions which result from compliance with the Sepro Line BACT Approval requirements.

Even though the Sepro Line required a separate approval, the VOC emissions from the Sepro Line will be included in AMC's facility-wide VOC emission limitation.

LEGAL AUTHORITY

The Department has determined that the manufacturing and packaging of personal care products, the storing and transferring of component chemicals, and the maintenance of associated equipment at your facility is subject to the requirement of 310 CMR 7.18(17) Reasonably Available Control Technology. Regulation 310 CMR 7.18(17) requires any person who owns, leases, operates or controls a subject facility to submit an emissions control plan, and have that plan approved by the Department under 310 CMR 7.18(20).

RACT HISTORY

The following describes the history of AMC's RACT plan:

- 1) The DEP contacted AMC on September 19, 1989 to discuss the facility's applicability to Regulation 310 CMR 7.18(17) (RACT for miscellaneous noncategorical sources), since AMC submitted Source Registration Forms as required by Regulation 310 CMR 7.12 for the previous year, which stated that VOC emissions were over 100 tons per year. AMC performed a mass balance calculation on the entire facility for

the 1988 Source Registration, and found that the facility's VOC emissions were not less than 100 tons as previously thought, but in excess of 100 tons per year.

- 2) AMC and the DEP met to discuss the RACT requirements, and then AMC began a lengthy process of evaluating the entire facility in order to determine exactly where the losses were originating from and how to reduce the losses. A series of stack/emission tests were performed at different locations throughout the facility, and VOC reduction/waste minimization programs (pollution prevention programs) were immediately developed and implemented during the evaluation process to reduce VOC emissions at the facility. In January of 1991 a Final Report was issued by AMC's consultant ENSR, titled Fugitive Emissions Measurement Program of Gas Room Vents and Tank Farm Components (the document, labeled Document No. 3073-003-600, was over 50 pages).
- 3) After testing was completed and VOC reduction programs were developed, AMC submitted a Draft RACT Compliance Plan (approximately 40 pages) in December of 1991, and requested comments from DEP and the United States Environmental Protection Agency (EPA). A meeting was set up with EPA, AMC and the Department to address EPA's and DEP's comments. AMC re-evaluated the RACT plan based on the comments received, and made modifications. AMC also continued to improve the pollution prevention programs, and performed additional testing to evaluate losses. After a third series of emissions testing was performed, another Final Test Report was issued in April of 1992 by ENSR. The report was titled Fugitive Emissions Measurement Program of Gas Room Vents (Document No. 3073-008-500), and contained over 60 pages of testing data.
- 4) In November of 1992, AMC's RACT Compliance Plan was officially submitted to the DEP and EPA for review (Application No. MBR-92-IND-053; Transmittal No. 60574). The document was approximately 500 pages, and a confidential version and a nonconfidential version were submitted. The plan contained the following information: 1) facility, process, and product descriptions, 2) an evaluation of the VOC emission losses throughout the facility, 3) detailed descriptions of propellant filling emissions sources, 4) a summary of the emissions reduction from implementing over 15 different pollution prevention measures at the facility, including equipment redesign and/or improvements, improved operation and maintenance, installation of VOC recovery equipment, leak and repair programs, preventative maintenance programs, and other VOC reduction measures, 5) emissions calculations, 6) an evaluation of the aerosol industry; and a comparison of AMC's controls to a typical aerosol packaging facility's controls in the United States (including applicability to any federal or state rules implemented in the country), 6) a description of potential VOC control alternatives, including propellant substitution, product reformulations, process modifications, and add-on air pollution controls, 7) a

technologies (following the guidelines in EPA's OAQPS Cost Control Manual), including a feasibility study which was more comprehensive than a BACT (Best Available Control Technology) analysis, 8) a technical and economic feasibility analysis evaluating control equipment such as incineration, traditional carbon adsorption technologies, flares, combined incineration/adsorption, carbon adsorption/pressurized desorption, absorption, condensation/compression, use of existing boilers to control emissions, and soil bed injection, 9) control alternatives for other VOC sources at AMC, such as the tank farm, the liquid mix room, the Day tanks, the can coders, the concentrate fillers, the conveyors, the leak test tanks, the tipplers, the scrap can collectors, and the spray test chambers, 10) Material Safety Data Sheets, letters from manufacturers of aerosol equipment, manufacturer's specifications and studies on control equipment, fugitive emissions measurement testing and studies to support conclusions, 11) a copy of the aerosol rule from Wisconsin state, and other information from EPA's Non-CTG RACT determinations, 12) sample recordkeeping forms for all pollution prevention programs and other requirements to enforce RACT, and 13) figures, graphs, and tables such as the Facility's Emission Summary table.

- 5) Meetings, site visits, and telephone conferences were held between AMC, EPA and the DEP to discuss the RACT plan. On June 24, 1993, DEP issued a Statement of Technical Deficiency which outlined over 17 areas where additional information was necessary in order for DEP to complete the review. AMC was required to submit the additional information within 6 months.
- 6) In December of 1993, AMC responded to the DEP's deficiency letter with a document (approximately 300 pages; ENSR Document No. 3073-004-600) which detailed responses to all of the questions listed in the letter. The document was submitted in a confidential and a nonconfidential version.
- 7) In February 3, 1994, EPA submitted a letter to AMC outlining EPA's concerns relative to the November 1992 RACT submittal. A meeting was held on March 31, 1994 with AMC, EPA, and DEP at the facility in Andover, to address EPA's concerns. Additional questions arose from both EPA and DEP. EPA requested the Cost Control Technology Feasibility to be re-evaluated based on 1986 emissions rates. EPA also had concerns over "federal enforceability" relating to daily recordkeeping and instantaneous compliance.
- 8) On June 10, 1994, DEP sent a "Suspension of Review" letter to AMC officially suspending the DEP's review of the project. The application was suspended (per Regulation 310 CMR 4.04), since a response was required by the permitting review timelines, but a decision on the RACT plan could not be made due to outstanding EPA concerns.

- 9) In August of 1994, AMC submitted a response document addressing EPA's concerns (based on the requests found in EPA's February 3, 1994 letter, and what was stated at the March 31, 1994 meeting). The ENSR Document (No. 3073-004-700) was approximately 300 pages, and was submitted in both a confidential and nonconfidential version.
- 10) Meetings, site visits, and telecons were held between AMC and DEP to address EPA's concerns. Outstanding issues related to EPA's comments on daily recordkeeping, instantaneous compliance, and "federal enforceability" continued to be issues. Meetings were held between AMC and DEP to find solutions which would address both EPA's issues, and AMC's concerns regarding permit flexibility (since the facility manufactures over 275 products, and new products are constantly being introduced); and practical, realistic, and useful recordkeeping (since there are approximately 150 different emission points at the facility). The resulting solutions (from the meetings and this RACT review) attempt to address all of EPA's concerns on "federal enforceability", as well as addressing AMC's recordkeeping and flexibility issues. The solutions to these EPA "enforceability" issues were evaluated for this individual facility on a case-by-case basis, and the solutions appear to be practical and realistic as well as in compliance with EPA requirements.
- 11) The Proposed Emission Control Plan Final Approval was issued on June 14, 1995. The Public Notice was published in the Lawrence Eagle-Tribune on June 22, 1995 and the Public Hearing was held on July 25, 1995 at DEP headquarters, located at One Winter Street in Boston. DEP received comments from EPA on the Proposed Emission Control Plan Final Approval. On July 21, 1997, DEP responded via fax to EPA's comments from July 25, 1995 and revised the Plan Approval. Since the RACT analysis was based on 1986 actual emissions which totaled 186.4 tons, DEP agreed with EPA's comment that the proposed 200 ton per rolling twelve month calendar period VOC cap was excessive. Specifically AMC and DEP agreed to reduce the facility wide potential VOC emission cap from 200 tons to 186 tons per rolling twelve month calendar period. Additional revisions were made to Proviso Nos. I-1, I-3, I-6, I-8, I-9, I-10, I-11, I-12, I-13, I-14, and I-17, in agreement with EPA's July 25, 1995 comments.
- 12) On March 7, 1997 the Department issued Conditional BACT Approval No. MBR-96-IND-045 for the Sepro Line, which included the requirement for Permanent Total Enclosure (PTE) and a thermal oxidizer, having a minimum VOC destruction efficiency of 98 percent by weight on the Sepro Line. As a result of reduced emissions, the DEP and AMC agreed to a reduced facility-wide VOC emission cap of 150 tons per twelve month rolling calendar period, which is reflected in this Final ECP Approval letter.

- 13) AMC's actual VOC emissions were reduced from an estimated high of 230 tons in 1977 (the facility's past emissions were re-calculated since 1969, based on previous production rates, and emission rates determined during RACT testing) to 54.7 tons in 1993, and 63.9 tons of VOC in 1994. Emission rates vary due to variations in production rates, and continuous changes in products required by regulation changes and fluctuating market demands (see emission charts normalized to 1990 production levels to account for yearly production values -Section 3, 11/92 document). Potential VOC emissions from this plant will be reduced from approximately 810 tons per year to 150 tons per year (an exact potential VOC emission rate has been difficult to quantify, since many lines cannot simultaneously be operated at a worse case rate, and approximately 150 emission points exist). The facility expects actual VOC emissions to be below 30 TPY (this reduction is partially a result of the Sepro Line BACT Approval) based on typical production rates, and hopes to continue to further reduce VOC emissions by pollution prevention techniques, particularly on a per product basis.

AMC requested a 150 tons per rolling 12 month calendar period VOC emission restriction, since the facility may need to take on additional production demands if other Gillette facilities are closed, or if "contract" aerosol fillers (filling Gillette products) go out of business. The contract fillers typically use under-cap-gassing (UCG) versus the less polluting Through the Valve (TTV) filling used by AMC. AMC is concerned that these "contract" facilities may not be able to stay in business if they need to add UCG control/reclaim equipment, or if they are required to convert to TTV filling (or if they need to achieve the additional 60-63 percent(%) reductions made at AMC for these RACT pollution prevention modifications). AMC is concerned that the more stringent requirements implemented in order to achieve new Clean Air Act standards and RACT compliance may mean "contract" fillers may close down. This would require the need for increased production at Gillette's AMC facility to maintain the same international production rates at Gillette.

FACILITY DESCRIPTION

The Andover Manufacturing Center of Gillette, which employs approximately 600 people, has been in operation since 1969. AMC is located at 30 Burt Road on a 150 acre site in Andover, Massachusetts. Some of AMC's main products include "Right Guard" deodorant, "Soft & Dri" antiperspirant, "Dry Idea" antiperspirant, "Foamy" shave cream, and "Gillette Series Clear Gel" deodorant and antiperspirant. A tank farm, with rail car and truck unloading stations, is located outdoors in the southeast portion of the facility. The manufacturing of Gillette's products occurs in one building, which occupies approximately 580,000 square feet (about 13.3 acres). The northern portion of the building is devoted to

raw materials warehousing and the southern portion is divided into two warehouses for finished goods. Three boilers producing steam for manufacturing and space heating are located in the northern portion of the plant. A resource recovery facility (DEP Class B-2 recycling Permit No. NE-94-064) located near the boilers is used to recover the heating/energy value of the contents of the waste cans, and to recover heat as process steam.

Numerous personal care products are manufactured in the main manufacturing area which is located in the center of the building. These products include: 1) propellant filled products such as antiperspirants, deodorants, shave cream, gel shave cream, hair spray; and 2) other personal care products such as stick deodorants, solid antiperspirants, hair products, and facial scrubs.

In Gillette's Emission Control Plan, VOC is categorized into three types as defined by other state rulings [California Air Resource Board (CARB) and the New York State Dept. of Environmental Conservation (NYSDEC)]. VOC has been classified as either high volatility organic compounds (HVOC), medium volatility organic compounds (MVOC) or low volatility organic compounds (LVOC). HVOC as defined by CARB and NYSDEC are those VOCs having vapor pressures greater than 80 millimeters (mm) mercury (Hg) at 20 degrees centigrade (°C). MVOC are VOCs having vapor pressures greater than 2 mm Hg, but less than or equal to 80 mm Hg at 20 °C. LVOCs have vapor pressures less than or equal to 2 mm Hg at 20 °C. The HVOC are most likely to be emitted into the air and generally have lower molecular weights (lighter compounds). In contrast, the LVOCs are least likely to be emitted into the air due to their low volatility, and typically have higher molecular weights (heavier compounds). For existing products, CARB and NYSDEC do not consider ethanol as a MVOC (even though its vapor pressure is 43 mm Hg at 20 °C). For the purpose of this review, HVOC, MVOC (including ethanol), and LVOC are all considered regulated VOCs. The compounds have been designated in the different classifications in order to determine where the majority of emissions are emitted from at the facility. In 1992, 74 percent (%) of the VOC emissions were classified as HVOC, 19% were MVOC and 7% were LVOC.

The majority of VOC emissions from the facility are hydrocarbon propellants, and ethanol solvents from aerosol propellant filling and ancillary operations from the manufacturing of personal care products. Although AMC manufactures a wide variety of products, only certain processes emit HVOCs such as isobutane, or MVOCs such as ethanol. One or more LVOCs such as propylene glycol, cyclomethicone or triethanolamine are found in most products manufactured at AMC. These LVOC's are essentially soaps and waxes, and have a very limited ability to volatilize into an air contaminant.

AMC lists approximately 150 miscellaneous emission sources at the facility (see the Dec. 1993 RACT document). The RACT study and testing disclosed that much of the VOC emissions are HVOC propellants from the gassing rooms (lines L1, L2, L4). The RACT study evaluated all VOC emission points from the facility, but focused primarily on the five

gassing rooms, which emitted 46.2 percent of the VOC emissions in 1992 (only three gas lines can operate simultaneously).

As part of the RACT study, a series of three testing programs was conducted by Gillette's consultant ENSR to evaluate the VOC losses (see the 1991 & 1992 ENSR reports in the 11/92 RACT document). The RACT study and testing resulted in the development of pollution prevention programs to reduce VOC losses at the facility. AMC made reductions in VOC losses by implementing the following measures (see Section 3 of the Nov. 1992 report): 1) modifying booster pump seals, and upper and lower packing boxes in the gassing rooms, 2) reducing safety venting frequency, 3) modifying gas room piping, 4) implementing the "WISE" program to reduce scrap and insure quality control, 5) improving tank farm operations, 6) implementing the Leak Detection and Repair Program (LDRP) for the Tank Farm and Roof [which is more stringent than EPA's LDRP regulations governing the Synthetic Organic Chemicals Manufacturing Industry (SOCMI) (40 CFR 60, Subpart VV) according to the 11/92 RACT document], 7) implementing the Gassing Room Emissions Test Program, and a Leak Detection and Repair Program for the gassing rooms, 8) further improvements on the Pump Leak Tests in the Gassing Rooms, which resulted in the implementation of the Booster Pump Maintenance Program and the Pressure Reduction Program, 9) researching new equipment and valves in order to fill different products using Through-the-Valve (TTV) filling, the least polluting filling technology, 10) converting to less polluting seal adapters to reduce filling losses, and 11) installing an A-31 propellant recovery system for the rail cars to capture compressor priming losses (the recovery system condenses propellant to a liquid and pipes the recovered material back to the storage tank).

The RACT study has cost Gillette over \$116,000 for testing, evaluation, and consultant costs. In addition, over \$40,000 was spent on equipment process changes, equipment redesigns for VOC reduction, and the A-31 propellant (VOC) recovery system. Many other costs have not been quantified. The total cost for Gillette was over \$156,000 to comply with this Regulation 310 CMR 7.18(17) for non-categorical RACT requirements (which requires that a source specific regulation be developed for the facility). Gillette also received a cost benefit from the implementation of these pollution prevention strategies, since reclaimed raw materials (VOC) results in a reduction in raw material purchased, as well as an environmental benefit.

Add-on control technology was not considered by AMC or the DEP to be the top selection for a RACT option. The feasibility of installing add-on air pollution controls was extensively evaluated for technological, environmental, and economical feasibility. Add-on controls were not considered economically feasible for AMC according to the RACT documentation. The cost calculations were performed according to the EPA's OAQPS Cost Control Manual and Guidelines. The cost calculations for each control option were initially evaluated in dollars per ton by using the 1992 emissions rates (see 11/92 document). In March 1994, EPA requested that the cost calculations be performed using the 1986 emission

rates, and the cost calculations were resubmitted in August 1994 based on the 1986 emissions rates.

AMC is proposing compliance with Regulation 310 CMR 7.18(17) - RACT. In addition, AMC has stated that all of its products are in compliance with Massachusetts Regulation 310 CMR 7.25, "Best Available Controls for Consumer and Commercial Products" which was promulgated on November 18, 1994. This regulation restricts VOC usage in consumer products such as aerosol products (hairsprays, deodorants, antiperspirants, etc.).

PROCESS DESCRIPTION

The facility has approximately 150 emissions sources which contribute to the overall VOC emissions rate from the plant. Emissions were evaluated from all of the VOC sources at the facility. Many of the sources were considered small or insignificant sources, but were evaluated as part of the plan. All VOC emissions, regardless of where they were emitted from (including insignificant sources, the Resource Recovery Facility, the boilers, the Sepro Line, etc.) are required to be included in the facility-wide VOC emission restrictions of 150 tons per 12 month rolling calendar period and 50 tons per month.

The propellant filling rooms emitted 39.1 tons in 1992, which was 46.2 percent of the total 1992 VOC emissions from the plant, therefore a significant part of the RACT documentation focused on the filling operation. In the propellant filling operation, there are eleven potential emission sources of VOC: the tank farm, the mixing rooms, the concentrated day tanks, can coding operations, concentrated fill areas, crimping areas, propellant filling rooms, water baths, tippers, spray test booths and scrap can collection bins. These eleven sources are described below in more detail.

Tank Farm:

The tank farm has 15 above-ground storage tanks (two tanks are presently not utilized). The tanks associated with aerosol filling are the three horizontal 30,000 gallon bulk storage tanks for propellants, and the four 12,000 gallon bulk storage tanks for ethanol (solvent). AMC and industry safety regulations only allow up to 85% of each propellant tank's capacity, or 25,500 gallons, to be filled. All of these tanks were installed in 1968. Of the propellant tanks, there is storage for propellant A-31, for propellant A-46, and for isopentane. The propellants and ethanol are delivered to the facility by rail car or tank truck. Propellant A-46 is usually delivered by truck because the quantity purchased is much less than that of A-31, which is normally delivered via rail car. There are four rail car unloading areas, one for each propellant and ethanol; and four truck unloading areas also dedicated to these four materials. Rail car capacity ranges from 32,500 to 33,500 gallons. Typical rail car

deliveries are 30,000 to 31,000 gallons of propellant. Tank trucks hold 10,000 gallons of propellant.

Improvements were made in the tank farm area to reduce VOC losses as part of the RACT Compliance Plan. Standard Operating Procedures were improved for truck disconnection losses of propellant (see Proviso No. I-13 under the Emission Limitations section of this letter). A propellant recovery system was also installed in the fall of 1992 at a cost of approximately \$23,000. The recovery system reclaims the A-31 propellant that condenses in the pipelines. The propellant was previously lost to the atmosphere through condenser bleeding.

The non-welded connections in the tank farm (pipes, pumps, valves, flanges, etc.) are checked semi-annually according to the Tank Farm Leak Detection and Repair Program (TFLDRP) which was developed as part of this RACT plan (see Proviso No. I-9 under the Emissions Limitation section of this letter). AMC's program is more stringent than the federal leak detection and repair rules found in 40 CFR Subpart 60 for Synthetic Organic Chemicals Manufacturing Industry (SOCMI) according to the Nov. 1992 RACT document. SOCMI requires maintenance on the pipe leak at 10,000 parts per million (ppm) and AMC's program requires action at 1,000 ppm according to the Nov. 1992 RACT document.

All of the preventive maintenance programs (including the TFLDRP) at AMC have now been computerized so that a notification is made by computer when maintenance is required anywhere in the plant. If corrective or maintenance procedures are not performed by a required time period, and logged into the computer, a second notification will automatically be generated until the maintenance activity has been completed.

These tank farm RACT improvements have resulted in a reduction of 23 tons per year (TPY) of VOC losses because of the Leak Detection and Repair Program; and a reduction of 6.8 TPY from connection losses improvements including the A-31 propellant recovery system (see attached Table I).

In 1992, 18.3 tons of VOC were emitted from the tank farm which was 21.6% of the total VOCs emitted from the facility (a total of 84.5 tons were emitted in 1992).

Mixing Rooms:

AMC operates two mixing rooms: the Liquid Mix Room and the Cream Mix Room. The Cream Mix Room contains approximately twenty-four tanks where water-based materials and materials containing LVOC's, such as propylene glycol, are mixed. The room as a whole is responsible for "negligible" VOC emissions (approximately 0.04 tons LVOC from the Cream Room), because of low volatility of the raw materials mixed.

The Liquid Mix Room also contains approximately twenty-four small stainless steel mixing tanks in which heating, mixing and cooling of batches (containing LVOC's and ethanol) take place. Because of the presence of ethanol, the room is equipped with explosion proof lights, telephones and fans. In addition, each tank (that is vented to the atmosphere) in this room is equipped with a conservation vent/flame arrestor.

Concentrates for antiperspirants, hair spray and deodorants (which contain ethanol, active ingredients, LVOC fragrance and other materials) are mixed and stored in this room. The tanks may be used interchangeably and are often moved within the room to improve the operation. All tanks have small latched hatches which are opened only when materials are added. Ethanol is pumped into tanks here, and the mixed concentrates are pumped to storage vessels.

The Liquid Mix Room ventilation system is designed for one air change every three minutes. Nineteen ducts at floor level pick up room air and exhaust it through the roof to the atmosphere. The Liquid Mix Room emitted 0.8 tons of VOC (MVOC & LVOC) in 1992, or 0.9% of the total emissions.

The mixing tanks in the Liquid Mix Rooms were not considered to be subject to Regulation 310 CMR 7.18(27), "Coating Mixing Tanks" for controlling VOC losses from surface coating mix tanks. Since the tanks contain formulations (which contain MVOC and LVOC), the design of the tanks was evaluated compared to the VOC emission reduction techniques listed in Regulation 310 CMR 7.18(27). The Liquid Mix Room tanks exceed the VOC reduction techniques listed in the regulation.

Day Tanks:

Two of the aerosol production lines are each equipped with day tanks dedicated to antiperspirant, hair spray and deodorant concentrates. The antiperspirant day tanks vent indoors and are not equipped with an exhaust fan. The hair spray and deodorant day tanks are vented to the outside by a common duct and fan rated at 800 actual cubic feet of air per minute (acfm). The exhaust fans operate all of the time for safety purposes. The day tanks emitted 2.4 tons in 1992 (2.8% of the total VOC emissions from the facility).

The facility plans to upgrade tanks (such as day tanks, or tanks in the Liquid Mix Room or the Cream Mix Room) in the future in order to reduce VOC losses and replace older tanks. AMC can replace these tanks as necessary without applying for approval under Regulation 7.02, provided that the actual VOC emissions from the new tanks does not result in a VOC emissions increase of more than one ton per year.

Can Coders:

After the cans are inverted in order to empty foreign material, the cans are righted, and date stamped on the can base to comply with company and FDA identification requirements. These mechanical coders use approximately three gallons per year of solvent ink cleaner which is equivalent to approximately 25 pounds per year of VOC emissions.

AMC date codes all products prior to shipment as required by law. AMC proposed that the date coding of products (metal cans, plastic containers, cardboard boxes, wooden pallets, etc.) is considered printing, and is not subject to the surface coating regulations listed under 310 CMR 7.18 (such as Sections 4, 11, 12, 14, & 21). The VOC emissions from all date coding, gluing, and printing were 0.5 tons in 1992 (which was 0.6% of the total VOC emissions in 1992). The date coding is performed by using either waterbased inks, low VOC or non-VOC inks when feasible, or solvent based inks if necessary. VOC emissions from all date coding shall be restricted to less than 5 tons per twelve month rolling calendar period [which is below the applicability threshold listed in Regulation 310 CMR 7.18(11), "Surface Coating of Miscellaneous Metal Parts and Products"]. VOC emission records from date coding shall be reported on the annual Emissions Statements as required under Regulation 310 CMR 7.12.

Concentrate Fillers:

In this operation, the mixture of active ingredients and solvent is dispensed into clean, empty cans. The concentrate is dispensed well within the empty cans and occupies 50% of the can volume or less. VOC emissions were 0.5 tons in 1992, or 0.6% of the total in 1992. Emissions from the concentrate fillers vent within the plant.

Crimping:

The insertion of the valve follows the filling operation in the typical process. The valve assembly loosely covers the 1 inch (") can opening. During crimping, the head space is evacuated at 16-20" Hg for product integrity, and subsequently locks the valve to the can. The cans are released to the conveyor. VOC emissions from crimping were predicted to be approximately 0.5 tons based on 1992 production.

Propellant Filling:

Gassing operations are served by the supply piping in isolated gas rooms containing: socket-welded piping, air-opened/spring closed manually operated and remotely operated valves, booster pumps, heat exchangers, flow, temperature and concentration sensors, multiple propellant-fill heads evenly distributed on rotary turrets, can conveyers and exhaust air plenums. In the roof of each gassing room is a large stack through which supply piping,

vent piping and room exhaust ductwork are routed. The diameters of these stacks range from 48 to 51 inches depending on the filling line. The tops of these stacks are configured as explosion relief caps. More details of the gassing rooms can be found in Section 2, pages 25-46, of the November 1992 document and throughout the other RACT documents.

VOC (HVOC) emissions from the gassing rooms (excluding maintenance venting from booster pump or gas head repairs, and safety venting) contributed 39.1 tons of the VOC losses in 1992 (46.2% of total). VOC emissions were significantly reduced by pollution prevention measures such as booster pump seal modifications, upper and lower packaging box modifications, reduced safety venting frequency, gas piping modifications, and Leak Detection and Repair Programs. These modifications resulted in the emission rate reductions listed in the attached Table I (based on testing emissions prior to the modifications and after the modifications).

Leak Test Tanks:

After crimping and propellant filling, the metal cans are drawn on a stainless steel table top chain over a stationary magnet path into a water bath at 140°F for up to 90 seconds. An operator observes the submerged cans to catch "leakers". Possible causes for leaking cans are improper valve crimp, valve leakage or can seam leakage. On average, about 20 cans per shift per tank are detected as leaking. Those cans are discarded into a vented "Scrap Can Barrel", and the content of the barrel is recovered in the Resource Recovery System. In 1992, an estimate of 1.1 tons of VOC (HVOC) were emitted from the leak test tanks (1.3% of the total VOC emissions in 1992).

Tipping Operations:

In tipping, plastic actuators are automatically sorted and placed on cans. The interference in fit of the tip bore and valve stem causes a minute amount of product and propellant to be dispensed. The tipping operations are enclosed and vented through roof penetrations. The tipper is located downstream from the leak test tank. The tipping operation does not emit hydrocarbons when shave creams are run (because propellant in the valve's dip tube has already been displaced into the can by a nitrogen purger). In 1992, 2.8 tons of VOC (HVOC & MVOC) were emitted from the tipping operation (3.2% of the total VOCs emitted in 1992).

Scrap Can Collection:

Scrap is accumulated in 55 gallon bins along the production lines. Because some scrap cans in these barrels may leak, Gillette exhausts the barrels to the tipper exhaust ducts for safety reasons. The contents of the barrels are collected at the end of every shift and the contents are recovered in the Resource Recovery System daily. It was estimated that in 1992,

6.2 tons of VOC were emitted into the air from this process (7.2% of the total VOC emissions in 1992).

Spray Test Chambers:

All production lines are equipped with very small chambers used for random test spraying of cans. The chambers are continuously vented by a fan on the roof. A maximum of about 30 cans may be tested in an hour on each line. In 1992, 0.3 tons were emitted from this process (0.3% of the total VOC emissions in 1992).

Resource Recovery System:

In addition to the equipment listed above, AMC is equipped with a Resource Recovery System to recover the energy (heating/Btu) value of the contents of the waste cans. The facility received an air quality approval for this recovery system (see Application No. MBR-81-INC-010 approval letter, in Section F of the 12/93 document). AMC was also issued a DEP Class B-2 recycling permit for this recovery system (Recycling Permit No. NE-94-064). Recycling permits are renewed every five years by the Department.

AMC recycles material at the facility, whenever feasible. The facility reuses chip board up to six times, and ships the board back to the supplier for recycle, when it is no longer usable. The facility also recycles corrugated cardboard, plastics, metals, and other products when possible.

AMC recovers waste cans in the Resource Recovery System, such as leaking cans, or cans that are past the required expiration date (which cannot be sold by law). The Resource Recovery System has two primary chambers, and one secondary chamber (which are all equipped to use natural gas to keep the temperatures at the proper levels). Unrecyclable paper trash is ignited in the first primary chamber, and the heat recovered is used to increase the temperature in the second primary chamber. After the second primary chamber is heated to the proper temperature (and the oxygen level is less than 5%), the waste cans are added to the second primary chamber. The plastic caps have been removed from the cans prior to loading, and the plastic is recycled.

In the second primary chamber, the cans break apart at the seams (or the valve cup), and release the propellant and alcohol (VOC). The VOC is drawn to the third chamber (the "secondary combustion chamber") where it is mixed with natural gas, and burned. The heat from the system is then recovered using a waste heat recovery boiler.

The system is equipped with thermocouples in each of the three chambers to measure the temperature inside the system. The temperature can be read on the digital readout on the system's control panel. The system also measures the pressure in five locations throughout

the system, and displays it on the control panel. These pressure monitors insure that the system is running under a negative pressure. Other operating parameters such as oxygen level and temperature are recorded at the second primary chamber.

There are interlocks on the second primary chamber to prevent loading of the unit until the appropriate temperatures and oxygen levels have been reached (operates at less than 4% oxygen, interlock is set at 5% oxygen level). The temperature in the secondary chamber ranges between 1600°F and 1800°F. The minimum temperature in the secondary chamber is 1600°F. The minimum retention time in the secondary chamber is 0.9 seconds which occurs at 1800°F. The thermocouple for the secondary chamber is located at the exit of the secondary chamber. The secondary chamber is also equipped with a firebrick lattice structure to enhance mixing. The unit is equipped with a strip chart recorder to continuously monitor the temperature in the secondary chamber.

The Resource Recovery System is fully equipped with automated controls to adjust important parameters in the system such as flow, temperature, oxygen levels, etc. Conveyor systems are used to transfer the waste and reclaimed metals, and the unit is equipped with a hydraulic ram feed. The system is also equipped with a closed circuit television in the control room, so that the operator can continuously view the stacks using the television monitor.

After the contents of the cans are reclaimed, the empty cans are removed from the system, crushed, and are sent off to a metal recycling facility. The metal is then reclaimed for reuse. The heat produced by the Resource Recovery System is ducted to a Waste Heat Recovery boiler, which uses the heat to convert water to steam. The steam is used to heat the facility and is used to operate the process equipment. The heat recovered in this Resource Recovery System allows the facility to burn approximately 90,000 gallons less of fuel oil per year in the facility's boilers; this equates to a reduction of 6.9 tons per year of sulfur dioxide (SO₂) emissions, and 2.5 tons per year of nitrogen oxides (NO_x) emissions from the boiler plant.

The ash from the first and second primary chambers has been tested for toxicity using the TCLP test (Toxic Constituent Leachate Procedure). The ash is considered nontoxic, therefore the ash is not considered a hazardous waste, and is not required to be shipped as hazardous waste under the Resource Conservation and Recovery Act (RCRA) regulations.

In addition to the SO₂ and NO_x reductions mentioned above, VOC emissions are reduced as well. Since many of the cans are leaking, it is estimated that shipping the can offsite for disposal would emit over 4.2 tons of VOC per year during off-site shipping (based on 1993 production levels). Since the cans are disposed of at the facility, the contents are recovered for heat, and these VOCs (4.2 TPY) are destroyed (this calculation is based on the assumption that half of the contents of the can would leak out prior to being recovered in the

system, and the remainder would be emitted during the off-site shipping process). These waste cans shall be recovered on a daily basis in order to minimize the VOC losses from the leaking cans (see Proviso No. 16 under Emission Limitations).

The VOC (propellants/alcohol) are not considered toxic compounds under the Toxic Use Reduction Act (TURA), nor are they considered Hazardous Air Pollutants (HAPS) under Title III of the 1990 Clean Air Act Amendments. Also, the contents of the cans (propellants, alcohol, etc.) are all approved by federal FDA rules for human safety to be used in consumer products. These VOC propellants (and alcohol) are considered ignitable by EPA regulations due to their high heating value. This ignitability characteristic (which makes them an excellent source for reclaiming heat energy) makes them very expensive to be shipped and disposed of as waste. The propellants and alcohols are considered combustible and/or flammable (because of their low flash points/high heating value), and are regulated during shipping under the Department of Transportation's safety rules. It has been calculated that the cost of shipping and disposing of these waste cans would be approximately \$1.00 per can, which equates to \$500,000 per year in shipping cost.

CONTROL EQUIPMENT DESCRIPTION

As described in the initial RACT Plan submittal dated November, 1992 (ENSR Doc. No. 3073-004-300) and as stated below, AMC has achieved significant actual emissions reductions in its hydrocarbon propellant emissions. The facility has also minimized its propellant emissions by using the lowest propellant emitting fill technology available: the through-the-valve (TTV) process. TTV filling emits 72 to 86% less VOC on a per-can basis than the other filling technology generally used in the aerosol industry [under-cap-gassing filling]. TTV filling is recognized as the lowest-emitting aerosol filling process available and is currently proposed by the Illinois EPA as the RACT for the aerosol fillers located in the Chicago area, a severe ozone nonattainment area.

In addition to TTV emitting 72 to 86% less emissions than UCG filling, process modifications to the TTV fillers and other equipment have enabled AMC to achieve propellant emission reductions of over 60% since 1985 (assuming the same production profile from year to year). These reductions have been achieved by AMC's redesign of the TTV filling seals, AMC's redesign for the propellant booster pump seals, adoption of rigorous leak detection and repair programs for the filling rooms, booster pumps and tank farm, propellant vent piping reductions, reduced safety venting control of compressor priming losses, and other control measures. AMC has also installed a propellant recovery system in the tank farm area to reclaim VOC propellants. According to the RACT documentation, these reductions exceed the reduction required by any aerosol filling VOC control rule published as of August 1994. Table I shows the control efficiencies resulting from AMC's RACT Emission Control Plan.

EMISSION LIMITATIONS

AMC has committed to minimize and reduce VOC emissions throughout the facility. In the March 1994 RACT document (p. 34 of the nonconfidential version) previous actual VOC emissions were recalculated based on the results of testing and previous production rates. In the 26 year history of the plant, HVOC emissions were recalculated to be highest in 1977 at 230 tons of HVOC from propellants alone (but the facility was not aware of these emissions until the RACT testing disclosed the losses). After implementing RACT measures to reduce VOC losses, AMC emitted 54.7 tons in 1993, and 63.9 tons in 1994 according to AMC's Emission Statements.

AMC proposed the below listed methods to comply with RACT requirements to minimize facility-wide VOC emissions. These measures allow for a facility-wide VOC reduction of 56% (comparing actual 1986 emissions with projected emissions for 1986 production levels if RACT strategies had been available in 1986)¹; in addition to the 72% to 86% reduction that TTV filling has over UCG (which is the most common method of filling for the industry according to the RACT document). Reductions to date have been achieved primarily because of 1) innovative in-house engineering modifications available at no other aerosol fillers, 2) performance of three different emission testing studies to accurately assess the sources and magnitude of the emissions, and 3) adoption of rigorous leak detection and repair and equipment maintenance programs.

As a result of AMC's continuous efforts, starting with equipment selection in 1967, AMC will have reduced its VOC emissions while maintaining productivity, product quality and without compromising safety. AMC has not operated its UCG line since 1992, and hopes to not require the startup of its UCG line in the future. If AMC proposes to start up the UCG line it shall meet the requirements listed below (see proviso numbers I-4, I-5, and I-17).

AMC uses TTV filling, a less polluting filling operation rather than UCG filling. UCG is predominantly used at other filling facilities, according to the RACT documents. As described on page 3-1 of the November 1992 RACT document, a hypothetical example comparing TTV and UCG filling is given. For every 1000 tons of VOC emitted by an UCG filler, a TTV filler would only emit 145 to 285 tons using TTV filling. At 1000 tons, an UCG filler would need 86% efficient controls to achieve 145 TPY, or 72% efficient controls to achieve 285 TPY.

AMC proposes to be in compliance with the RACT requirements found in Regulation 310 CMR 7.18(17), via the implementation of the below listed RACT strategies.

¹ ENSR document Number 3073-004-700, August 1994 Comment/Response Document, Appendix B, page 5 of 5 of handwritten calculations

The Department is of the opinion that the material submitted is in conformance with the current Massachusetts Air Pollution Control Regulations and hereby grants an EMISSION CONTROL PLAN FINAL APPROVAL, for the subject RACT plan, with the following provisos:

- I. AMC shall restrict its facility-wide VOC emissions to a maximum of 150 tons per rolling 12 month calendar period, and to a maximum of 50 tons per month. AMC will document compliance with this cap through the use of a rolling 12 month VOC calculation. Each month, AMC will use its ethanol and hydrocarbon mass balance (HVOC/MVOC) tracking procedures to calculate the actual ethanol and propellant losses over the month. Those losses will be added to the sum of the ethanol and propellant losses over the previous eleven months. Emissions from LVOC compounds contribute to less than 7% of the total VOC emissions from the facility (based on the 12/93 submittal, page 2). LVOC emissions shall be calculated using the LVOC emission calculation procedure.

AMC has proposed the use of this VOC tracking system as the most practical approach for demonstrating compliance with the monthly limit and rolling 12 month limit. This approach requires AMC to continue to track production and emissions closely, but allows flexibility necessary for planning, production and safety. In addition to demonstrating compliance with these emission limits, AMC will adhere to specific RACT strategies described below. The strategies were originally found in Section 6 of the RACT study dated November 1992. These RACT strategies were modified in Section 4 of the August 1994 RACT document in order to respond to EPA's February 3, 1994 comments on Federal Enforceability. These RACT strategies were further modified in response to EPA's July 25, 1995 comments and are described below:

1. AMC shall maintain dedicated RACT Compliance Files, in order to determine compliance. All files must display the date of initial filing. All files must be maintained for a period of at least five (5) years after the initial date of filing. The files must be made available to DEP and EPA personnel for inspection. Sample recordkeeping forms have been submitted for review in the RACT documents (see Appendix F of the August 1994 document, and Appendix J of the Nov. 1992 document) and are included in Appendix A of this Plan Approval. AMC may modify and/or improve the sample recordkeeping forms in Appendix A without notification, provided that all of the information

in the sample recordkeeping forms in Appendix A necessary to determine compliance is still available.

2. AMC must continue to use Through-the-Valve (TTV) filling for all products that currently are, or have ever been successfully TTV-filled, including those hair sprays that have been successfully converted from Under-the-Cup (UTC or UCG) filling.
3. When a new aerosol-packaged product is considered for introduction, the standard testing procedures must include evaluation of the technical feasibility of TTV filling. If technically feasible, the new product must be TTV-filled. Copies of the test evaluation results must be maintained in the RACT Compliance Files for at least five (5) years and must be made available for DEP and EPA review. AMC shall continue to utilize pollution prevention techniques, such as TTV filling, whenever feasible to minimize VOC losses.
4. AMC has not utilized the UCG line in six years, but if AMC requires the use of its existing UCG line for special new products which can not be filled by TTV filling, AMC must notify the DEP and EPA in writing. AMC may begin operations with the UCG filler four (4) weeks after notifying the DEP. AMC must also notify the DEP and EPA of the start-up date of the unit. Within three (3) months from the start-up date of the UCG unit, AMC must complete its evaluation of the technical feasibility of installing enhanced UCG filling (employing Low Pressure Sequencing Springs in conjunction with process temperature gradient control). If the technique is determined to be technically compatible with the proposed UCG-filled product, AMC must install the sequencing springs on each UCG filler head. AMC must maintain the UCG evaluation reports in its files for at least five (5) years and make these records available to the DEP and EPA.
5. If the existing UCG-filling operation is used, AMC must limit the number of UCG-filled units to 10 million units per year and 210,000 units per day. AMC must record the number of UCG-filled products on a daily basis. The records must be maintained in the files for at least five (5) years and be available for DEP and EPA review.
6. AMC must continue use of the seal-less booster pumps on Lines 1 and 2. For Line 4, AMC must continue use of its Booster Pump Maintenance Program which is included in Appendix A-1 of this Plan Approval. For the pump on Line 4 (TTV only), the seal must be

replaced every 4 weeks and the plunger replaced every 12 weeks. For the Line 4 Sepro pump, the seal must be replaced every 6 months and the plunger replaced every 2 years. All associated records, including the date that seals and plungers are replaced, must be maintained in the RACT Compliance Files for at least five (5) years and be available for DEP and EPA review.

7. AMC must continue use of its Reduced Pump Pressure Program. Under this program AMC must post next to each filling line the optimal matrix of pump pressures as a function of can size and fill speed (which itself is a function of numerous variables, such as aerosol valve configuration). AMC must update its matrices as necessary. Copies of all matrices, including outdated matrices, must be included in the RACT Compliance Files for at least five (5) years and must be available for DEP and EPA review. DEP and EPA may review the matrices as posted next to the gassing rooms, as well. AMC's Changeover Procedures shall be revised to require use of the matrix. This SOP for Changeover Procedures must also be available for the DEP and EPA review.
8. AMC must continue use of its comprehensive Aerosol Filling Room Leak Detection and Repair Program (AFRLDRP), which can be found in Appendix A-2 of this Plan Approval. The AFRLDRP must be conducted at least semi-annually on all gassing room pipeline hardware. All inspection reports and repair records must be maintained in the RACT Compliance Files for at least five (5) years and must be available for DEP and EPA inspection.
9. AMC must continue use of its comprehensive Tank Farm Leak Detection and Repair Program (TFLDRP) which includes both propellant and ethanol fugitive emission sources as described in Appendix A-3 of this Plan Approval. All components of the Tank Farm and outdoor piping must be inspected semi-annually. All inspection reports and repair records must be maintained in the RACT Compliance Files for at least five (5) years and must be made available for DEP and EPA inspection.
10. AMC must continue its present gas room safety venting practice of venting only for reasons of maintenance, emergencies and/or long-term shutdowns (i.e., anticipated 7 days out of use). Each safety venting must be recorded. Specifically, the gas room operator's initials, date, time, reason, location, and approximate amount of VOC

that is vented must be documented. Venting procedures and a sample recordkeeping form can be found in Appendix A-4 of this Plan Approval. Actively used records must be kept by each filling room, and accumulated records must be stored in the RACT Compliance Files for at least five (5) years and made available for DEP and EPA review.

11. AMC must use the A-31 Propellant Recovery System to control the disconnect and priming losses of A-31 in the Propellant Tank Farm at all times that A-31 is being unloaded from railcars. Copies of Standard Operating and Standard Maintenance Procedures must be maintained at all times at the Tank Farm and in the RACT Compliance Files for inspection by DEP and EPA. Standard Operating and Standard Maintenance Procedures for the A-31 Propellant Recovery System can be found in Appendix A-5 of this Plan Approval. These procedural records must be stored permanently in the files.
12. AMC must continue to use stem seal adapters for all of its current shave cream (non-gel) products. For any new shave cream (non-gel) products, stem seal adapters must be evaluated for technical feasibility, and used if technically feasible. The evaluation of stem seal adapters for any new shave cream products (non-gel) must be maintained in the files for a period of at least five (5) years and made available for DEP and EPA inspection.
13. AMC must continue to use the A-31 propellant recovery system, and its present practice of minimizing tank farm truck disconnect losses of propellant, as described in Appendix A-6. The Tank Farm operator must record information about each tank truck delivery, including the date, propellant type and the operator's initials. Sample forms can be found in Appendix A-6 of this Plan Approval. These records must be kept in the RACT Compliance Files for at least five (5) years and must be made available for DEP and EPA inspection.
14. AMC must continue its maintenance practices for the Liquid Mix Room tanks containing alcohol-based products to ensure that hatch seals are in place and intact. Appendix A-7 of this Plan Approval includes a copy of the maintenance procedures, maintenance schedule and a sample form. AMC must keep the tank hatches closed whenever possible. Tank truck hatches and rail car hatches in the

Tank Farm must also be closed at all times except during loading or unloading.

The equipment in the Liquid Mix Room is not considered "coating mix tanks used for surface coating" under Regulation 310 CMR 7.18(27), but AMC employs the pollution prevention techniques listed in this rule for stationary and portable mix tanks to reduce VOC losses (and exceeds the requirements). The Clear Gel mixing and storage tanks in the Liquid Mix Room tanks are vented to an alcohol absorber control system (which was believed to collect the alcohol in water, and cause it to breakdown). Since this system transfers alcohol from air to water, and no testing data is available, it will be assumed that all of the alcohol eventually is released back into the air, unless proven otherwise.

15. AMC must minimize the use of ethanol for non-production use (labs & parts cleaning) and must continue to track its alcohol usage on a monthly basis. These records will be kept in the RACT Compliance Files for a least five (5) years and be made available for DEP and EPA inspection.
16. AMC shall reclaim the production line waste cans on a daily basis (to prevent leaking cans from adding additional VOC into the atmosphere) provided that the Resource Recovery Facility is: 1) operating in accordance with all provisions of its air quality permit (Application No. MBR-81-INC-010), 2) operating according to its Recycling permit (NE-94-064), 3) operating according to any other EPA and DEP requirement, and 4) is not down for maintenance. Nonmethane hydrocarbon (NMHC) emissions from this unit were calculated at 2.3 actual tons per year (based on the 1986 production rate of 1500 tons of scrap). Potential NMHC emissions were calculated at 11.9 tons per year (see Section 3-5 of the August 1994 document). Actual NMHC emissions from the Resource Recovery Facility shall be included in the AMC's facility wide VOC emission limitations.
17. AMC must comply with a facility-wide VOC emission caps of 150 tons per rolling 12 month calendar period and 50 tons per month. All VOC emissions from the entire facility are included in these emission restrictions (e.g. filling operations, the Resource Recovery System, boilers, Sepro Line, tank farm, miscellaneous sources, etc.).

If AMC continues not to operate its Line 2 UCG filler, the facility can demonstrate compliance on a monthly basis. If and when AMC proposes to use its Line 2 UCG filler, it will calculate its daily propellant emissions on a daily basis, and continue to demonstrate compliance with its monthly and rolling 12 month limits.

Based upon current business projections, AMC anticipates that future operations and production rates will be similar to present rates. Annual VOC emissions are expected to be below 30 tons, which is lower than expected at the time the Proposed ECP Final Approval was issued in June of 1995 (in part due to the Sepro Line BACT controls implemented in 1997). However in order to expedite a ramp-up in production required by the possible shutdown of other Gillette filling plants, AMC requested a 150 tons per rolling 12 month calendar period VOC cap for the purpose of retaining operational flexibility. The 150 tons per rolling 12 month calendar period VOC cap was based on the scenario that AMC would have to take on additional production. In the event that any of Gillette's other manufacturing facilities (such as Mexico City, Mexico, St. Paul, Minnesota, and Reading, England) and/or contract fillers shut down as a result of natural disaster, union strikes or other reasons, AMC would need to increase production with a short term notice of potentially less than 24 hours. In addition to a potential increase in emissions due to the possibility that Gillette's other facilities might shut down is the possibility that AMC would have to use an alternative propellant or formulation as a result of personal care product changes required by the Clean Air Act Amendments or other relevant regulations. AMC has therefore requested a VOC emission cap of 150 tons per rolling twelve month calendar period to accommodate its need for potential increased production.

AMC anticipates actual emissions to be well below its proposed cap. AMC believes that it would be impractical to demonstrate compliance with the cap on a daily basis (except for the UCG line, if used) and that daily recordkeeping on 150 emission sources (and over 275 products) would be overburdensome, unnecessary and may be less accurate than emissions records calculated over a longer averaging timeframe. Since the emission restrictions in this approval are monthly limits and a rolling 12 month limit, continuous recordkeeping on a daily basis (for all 150 emission points) would not provide useful compliance information. Emission records are more accurately maintained if mass balances, purchasing/usage records, and

recordkeeping are performed using longer timeframes (such as monthly). Requiring daily records may necessitate a production worker at all of the 150 emission points to keep continuous recordkeeping logs of usage rates. These recordkeeping logs maintained at the VOC usage site can often be less reliable than having environmental managers performing mass balance calculations using purchasing/usage/waste shipment inventory records over a longer timeframe.

The primary method to minimize emissions at AMC is to maintain the preventive maintenance programs on the aerosol filling rooms, and to maintain its leak detection/repair programs, and other pollution prevention programs. These repair and maintenance programs require immediate recordkeeping after the work has been performed, and the records are considered short term (continuous, instantaneous and daily) recordkeeping. Daily recordkeeping shall be maintained for all of the pollution prevention and/or preventive maintenance programs as required above.

In order to maintain operational flexibility, AMC believes that use of a monthly calculation to demonstrate compliance with its caps is appropriate, as long as UCG filling is not taking place. If UCG filling is to occur, AMC would estimate facility-wide daily propellant losses on a daily basis and continue to demonstrate compliance with its monthly cap and rolling 12 month cap.

At any time, should AMC calculate that its estimated annual propellant and ethanol emissions are greater than 90% of its emissions cap of 150 tons per rolling 12 month calendar period (i.e., above 135 tons), AMC will notify the DEP and EPA of this in writing. AMC will modify its production schedule to prevent an exceedance of its cap.

AMC will maintain all calculations and monthly summary reports in its RACT Compliance Files for at least five (5) years and make these records available to the DEP and EPA for inspection.

18. Should a new type of propellant be chosen or a concentrate solvent substitute for ethanol be chosen other than those listed below, AMC must evaluate the effects of the change and notify the DEP in writing of the substitution, the effect on emissions and other effects of the proposed change prior to making the change. AMC shall maintain

records on these reformulations changes that require DEP and EPA notification, and shall keep the records in its RACT Compliance Files for at least five (5) years. Propellants and concentrates considered acceptable to substitute or use without notification include:

Acceptable materials for normal production of aerosol-packaged products:

Acceptable propellants (HVOCs):

1. propane
2. normal butane
3. pentane
4. isopentane (as a propellant; isopentane is now used as a "blowing agent")
5. dimethyl ether
6. propellant HFC-152A
7. combinations of any of the above propellants

Acceptable solvents (MVOCs):

1. any type of ethanol for production

Acceptable material for normal production and ancillary operation:

AMC may use the following materials without prior DEP and EPA approval provided that facility continues to use pollution prevention techniques to minimize emissions; and maintains emission records:

1. any solvents or materials in the laboratories;
2. any cleaning solvents associated with ancillary operations;
3. any MVOC or LVOC for any other purpose.

[VOC and other ingredients in AMC's products are not considered toxic under TURA or Title III. Federal FDA regulations require consumer products to be nontoxic. Also, in the past AMC had been subject to TURA for a compound used in water treatment, but is not currently subject to TURA requirements since switching to a reverse osmosis water treatment system].

19. AMC is subject to 310 CMR 7.18(17) and therefore must also comply with 310 CMR 7.18(1)(c) which requires that VOCs be stored and disposed of "in a manner which will minimize evaporation to the atmosphere. Proper storage shall be in a container with a tight fitting cover. Proper disposal shall include incineration in an incinerator approved by the Department, transfer to another person licensed by the Department to handle VOC, or any other equivalent method approved by the Department." If the VOCs are shipped out of state, the incinerator does not specifically require a DEP approval letter, it would require that federal standards are being met at the out of state facility. AMC shall maintain records on VOC/waste disposal as required by MGL chapter 21C.
20. AMC must continue to conduct semi-annual Hydrocarbon Safety Training for its gas room mechanics. AMC must retain copies of the attendance lists in its RACT Compliance Files for at least five (5) years and make these records available for EPA and DEP inspection. AMC has developed a Propellant and Ethanol Tank Farm Emissions Minimization Program to teach new Tank Farm operators the RACT compliance procedures. This program must be conducted within the first week of a new Tank Farm operator's hiring/transfer, whenever a new person is assigned to the Tank Farm for a period of longer than one month. This program is contained in Appendix A-8 and must be maintained in the RACT Compliance Files permanently and a record of Tank Farm operator training must also be included in the RACT Compliance Files for at least five (5) years. These records must be available for EPA and DEP inspection.
21. AMC shall restrict date coding operations such that facility-wide VOC emissions from all date coding shall be restricted to no more than 1 ton per month and to no more than 5 tons per rolling twelve month period. AMC shall prepare and maintain records sufficient to document the compliance status with respect to these date coding emissions restrictions.

II. RECORDKEEPING REQUIREMENTS

1. AMC shall prepare and maintain records sufficient to document the compliance status with respect to the monthly facility-wide VOC emission restriction of 50 tons, and the rolling 12 month facility-wide VOC limit of 150 tons. Records shall be kept as described in the

RACT requirements listed above in Nos. I- 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, and 21 (under Emissions Limitations). Compliance records shall be kept on site for five years and shall be made available to representatives of the Department and EPA upon request.

2. AMC shall maintain an Environmental Logbook which shall record significant actions associated with environmental issues and overall emissions changes at the facility. The facility shall record information such as the results of federal, state, or local environmental inspections; maintenance or corrective actions related to pollution control/recovery equipment; and measures taken to lower overall emissions to the environment (air, solvent waste, etc.). If records are already kept in separate logbook(s) or in the RACT compliance files, the Environmental Logbook does not have to duplicate the files, but can highlight significant notes from the other recordkeeping files, or make reference to the other files.

III. REPORTING REQUIREMENTS

1. Records shall be maintained on site (see recordkeeping requirements above). AMC shall, upon request of the Department, submit any of the above described records to the Metropolitan Boston/Northeast Regional Office or the EPA for review. The frequency of reporting submittals will be indicated in any such request. Emission records shall be submitted to the Department as required by Regulation 310 CMR 7.12 for Emission Statements.

IV. TESTING REQUIREMENTS

1. AMC shall, upon request of the Department, perform tests (or have the tests performed by a third party) to demonstrate compliance with 310 CMR 7.18 (17). Testing shall be conducted in accordance with EPA Method 24 and/or Method 25 as described in CRF Title 40 Part 60, or by other methods approved by the Department.

V. GENERAL

1. The Gillette Company shall maintain continuous compliance at all times with the terms of this Emission Control Plan.
2. This approval may be suspended, modified, or revoked by the Department if at any time the facility is violating any applicable regulation(s) and/or condition(s) of this approval letter.
3. The application material submitted and this approval letter together constitute the approved Emission Control Plan. Where there is a conflict between the submitted information and this approval letter, this letter shall rule.
4. The Department has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Environmental Affairs, for air quality control purposes, was not required prior to this action by the Department. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and Regulation 301 CMR 11.00, Section 11.03, provide certain "Fail-Safe Provisions" which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report at a later time.
5. As per Regulation 310 CMR 7.02, AMC shall not install new equipment or modify existing equipment in a way which would increase annual potential emissions by one or more ton without first obtaining written approval from the Department.

PUBLIC NOTICE, PUBLIC HEARING, PUBLIC COMMENT REQUIREMENTS

The public notice for this ECP was published on June 22, 1995 in the Lawrence Eagle Tribune in accordance with the requirements of 310 CMR 7.18(20). This legal notice concerned the July 25, 1995 public hearing and comment period that was conducted prior to issuance of this FINAL APPROVAL for this Emission Control Plan. The public hearing was held on July 25, 1995 at the Massachusetts Department of Environmental Protection headquarters, located at One Winter Street in Boston, Massachusetts. The DEP received written comments dated July 25, 1995 from the EPA and responded via fax on July 21, 1997.

APPEAL PROCESS

This Emission Control Plan Final Approval is an action of the Department. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date you received this plan approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts which are the grounds for the request, and the relief sought. Additionally, the request must state why the plan approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, Massachusetts 02211

The request will be dismissed if the filing fee is not paid unless the appellant is exempt or granted a waiver as described below.

The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

The Department may waive the adjudicatory hearing filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

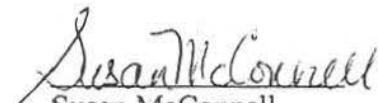
Please be advised that this approval does not negate the responsibility of The Gillette Company to comply with this or any other applicable federal, state, or local regulations now or in the future. Nor does this approval imply compliance with this or any other applicable federal, state, or local regulations now or in the future.

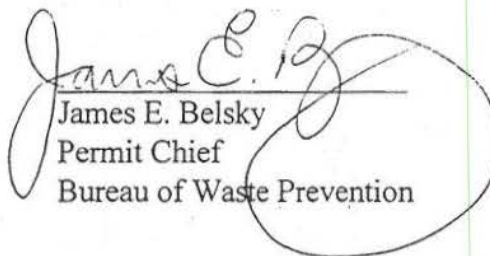
The Department strongly recommends that The Gillette Company audit any and all of its discharges of pollutants to the environment (in all media, air, sewer, ground and surface water discharges, hazardous or solid waste disposal, etc.) to verify compliance with all applicable regulations and/or standards. Should The Gillette Company have questions regarding the applicability to, or compliance with, any Department regulation(s), please

contact the Regional Service Center at the Metropolitan Boston/Northeast Regional Office, 205a Lowell Street, Wilmington, MA 01887.

Should you have any questions concerning this matter or regarding the terms or conditions of this approval, please do not hesitate to contact Susan McConnell at the Metropolitan Boston/Northeast Region, 205a Lowell Street, Wilmington, MA 01887.

Very truly yours,


Susan McConnell
Environmental Engineer


James E. Belsky
Permit Chief
Bureau of Waste Prevention

cc: DEP, DAQC, 1 Winter Street, Boston, MA 02108
Attn: Mr. Donald Squires, Paul Riley
Board of Health, Town Hall, Bartlett Street, Andover, MA 01810
Fire Department, 32 N. Main Street, Andover, MA 01810
DEP, NERO - Susan McConnell, Thomas Parks
EPA, J.F.K. Building, APS-2311, Boston, MA 02203
Attn: Mr. David Conroy, Ms. Jeanne Cosgrove

TABLE I
 CONTROL EFFICIENCIES FROM RACT MODIFICATIONS

Does not include the 72-86% reduction TTV filling has over UCG filling (except for the hairspray UCG filling equipment which was redesigned by AMC to use TTV filling techniques)

	<u>From</u> (1986 emission rates)	<u>To</u> (after RACT strategies)	<u>% Control</u>
1. Reductions From TTV Filler and Pump Improvements:¹			
Hairsprays	0.008727 lb/can (UCG)	0.00104 lb/can	88
Antiperspirants	0.002481 lb/can	0.00104 lb/can	58
Deodorants	0.001293 lb/can	0.00104 lb/can	20
Shave Creams	0.001269 lb/can	0.00064 lb/can	50
2. Piping Volume Reductions and Reductions in Venting Losses per Venting Episode:			
Line 1 TTV	159.8 lb/hr	71.9 lb/hr	87
Line 2 TTV	108.1 lb/hr	55.0 lb/hr	50
Line 2 UCG	108.1 lb/hr	51.2 lb/hr	53
Line 4 TTV	98.7 lb/hr	9.6 lb/hr	90
3. Reduction from Tank Farm:			
Leak Detection and Repair	26 tpy	3 tpy	88
Connection Losses	13.6 tpy	6.8 tpy	50

¹ ENSR document Number 3073-004-700, August 1994 Comment/Response Document, Appendix B, page 1 of 5 of handwritten calculations

Appendix A

Recordkeeping to Enforce RACT

- A-1** Booster Pump Maintenance Program
- A-2** Aerosol Filling Room Leak Detection and Repair Program
- A-3** Tank Farm Leak Detection and Repair Program
- A-4** Safety Venting Records
- A-5** Standard Operating and Standard Maintenance Procedures for
the Propellant Recovery System
- A-6** Tank Farm Truck Disconnect Losses
- A-7** Liquid Mix Room Alcohol Vessel Hatch Seal Maintenance
- A-8** Tank Farm Operator Training Program

A-1 Booster Pump Maintenance Program

Gillette	Title:	Date:	Rev:	Page:	Document no:
	Booster Pump Maintenance	6/03/99	1	1 of 2	RACT_005.DOC

PURPOSE: To ensure that gas room booster pumps are maintained in a timely manner.

APPLICABILITY: This program now applies only to the shave cream booster pump on Line #4. The booster pumps on Lines #1 and #2 do not have dynamic seal boundaries and therefore do not require maintenance to prohibit air emissions.

RESPONSIBILITY: Gas Room Operators will maintain the booster pumps identified on this sheet as indicated.

WEEK NO.	WEEK BEGINNING DATE	LINE #4 PF	LINE #4 GEL
1			
2			
3			
4			
5			
6			
7			
8			
9			
0			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
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25			
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31			
32			
33			
34			
35			
36			

UNCONTROLLED

<i>Gillette</i>	Title:	Date:	Rev:	Page:	Document no:
	Booster Pump Maintenance	6/03/99	1	2 of 2	RACT_005.DOC

37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			

UNCONTROLLED

**A-2 Aerosol Filling Room Leak Detection and Repair
Program**

P.M. # 50217

LINE #2 UNDERCUP GASSER ROOM

CHARGE NO. 999-60-582

- (=) WORK TO BE DONE
- (O) OK
- ADJ. MADE
- (O) REPAIRS MADE
- (*) PARTS ON ORDER

PIPEFITTER
 HYDROCARBON LEAK TEST

- WEEK NO. _____
- DATE DUE _____
- DATE _____
- CLOCK NO. _____
- REGULAR HOURS _____
- OVERTIME HOURS _____

73 POINTS

SEMI-ANNUAL

WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP.	
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS.	
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.	
4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF THE REPAIR.	
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM.	

COMMENTS:

SIGNATURE INDICATES THAT ALL 73POINTS OF THE L-2 UNDERCUP GASSER HAVE BEEN SURVEY INSPECTED.

SIGNATURE: _____ INSPECTION COMPLETED.
 DATE: _____ NO LEAKAGE VIOLATIONS.

SIGNATURE: _____ INSPECTION COMPLETED.
 DATE: _____ REPAIRS REQUIRED.

- (=) WORK TO BE DONE
- (v) OK
- (x) ADJ. MADE
-) REPAIRS MADE
- (^) PARTS ON ORDER

PIPEFITTER
HYDROCARBON LEAK TEST

WEEK NO. _____
DATE DUE _____
DATE _____
CLOCK NO. _____
REGULAR HOURS _____
OVERTIME HOURS _____

95 POINTS

SEMI-ANNUAL

WORK DETAIL:

- | | |
|---|--|
| 1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP. | |
| 2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS. | |
| 3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIRS NEEDED" TAG AND
ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR. | |
| 4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF
THE REPAIR. | |
| 5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM. | |

COMMENTS:

SIGNATURE INDICATES THAT ALL 95 POINTS OF THE L-2 PRESSURE GASSER HAVE BEEN
THOROUGHLY INSPECTED.

SIGNATURE: _____ INSPECTION COMPLETED.
DATE: _____ NO LEAKAGE VIOLATIONS.

SIGNATURE: _____ INSPECTION COMPLETED.
DATE: _____ REPAIRS REQUESTED.

P.M. # 50215

LINE #4 GEL GAS ROOM

CHARGE NO. 999-60-584

(=) WORK TO BE DONE

PIPEFITTER

WEEK NO. _____

OK

DATE DUE _____

ADJ. MADE

HYDROCARBON LEAK TEST

DATE _____

(o) REPAIRS MADE

CLOCK NO. _____

(*) PARTS ON ORDER

REGULAR HOURS _____

OVERTIME HOURS _____

124 POINTS

SEMI-ANNUAL

WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP.	
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS.	
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.	
4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF THE REPAIR.	
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM.	

COMMENTS:

SIGNATURE INDICATES THAT ALL 124 POINTS OF THE L-4 GEL SYSTEM HAVE BEEN SURVEY INSPECTED.

SIGNATURE: _____ INSPECTION COMPLETE.
 DATE: _____ NO LEAKAGE VIOLATIONS.

SIGNATURE: _____ INSPECTION COMPLETE.
 DATE: _____ REPAIRS REQUESTED.

A-3 Tank Farm Leak Detection and Repair Program

**PREVENTIVE MAINTENANCE PROGRAM AT THE GILLETTE COMPANY
ANDOVER MANUFACTURING CENTER
ANDOVER, MASSACHUSETTS**

INTRODUCTION

In order to enforce Reasonably Available Control Technology (RACT) requirements in 310 CMR 7.18, AMC has adopted the following Preventive Maintenance (PM) Program. The goal of the PM Program is to minimize volatile organic compound emissions from the propellant tank farm, the ethanol tank farm, the gassing rooms and all associated pumps, compressors, piping and other transfer- and storage-related components. The Program is based on a semi-annual inspection of all potentially leaking components using a portable hydrocarbon analyzer, the tagging of leaking components, the repair of the leaking components within a specified time interval and the tracking of all maintenance activities on AMC's computer network. A component is considered to be leaking if the hydrocarbon analyzer reads 1,000 ppm or more.

The Program as outlined in this document must be fully complied with at all times. Should AMC fail to comply with each requirement set forth in this document, AMC may be subject to enforcement actions and administrative penalties. It is therefore important that each new employee to be involved with the PM Program review these procedures with his or her Department Supervisor prior to involvement with the Program. Likewise, all current employees must also review this Program as written even though preventive maintenance activities have been in place for several months.

The purpose of this document is to present a Program overview as well as to provide explicit maintenance instructions on a task by task basis.

PROGRAM OVERVIEW

1. Program Management and Staffing

The PM Program is managed by the Facilities Department. The following Departments within AMC report to the Facilities Department specifically for this PM Program:

- Electricians
- Mechanical
- Plumbing
- Environmental

All individuals working on the PM Program must report directly to their Department Supervisors. In case the Department Supervisors are not available, any questions should be directed to the Manager of the Facilities Department. If that person is unavailable, contact the Senior Environmental Specialist.

If a user has questions or problems with the computerized portion of the Program, the Department Supervisor should be contacted. If that person is unavailable, the Manager of the Facilities Department should be contacted.

2. Access to Computerized System

The PM Program is managed and recorded with an IBM PC-based system. The Program is written using CLIPPER™ software and is managed by the MIS Department. For purposes of security, the Program may only be accessed by employees that have been issued a User ID Number, a User Name and a Password. Different levels of security are built into the Program. Certain users will be able to enter the Read Only menu. Other users will be able to enter all of the menus, up to the Modification of Entries menu. Only persons in the MIS Department may actually modify the Program.

The location of the PCs having access to this Program are on file in the MIS Department.

3. Content of the Computerized System

The PC program is fairly straightforward. It retains information on separate maintenance tasks. The tasks are organized in this computer program by several factors including raw material type, component type, craft and work zone. Raw materials are either Propellant A-46, Propellant A-31, isopentane or ethanol. Dimethyl ether may also be used. Component types are pumps, compressors, valves, flanges, and threaded pipe connections. The information is also organized by Department (e.g. Plumbing, Electrician, Mechanical) and by zone.

Propellants A-31 and A-46 are each divided into 6 zones. Isopentane is divided into 3 zones. The gassing rooms are divided into 5 zones and the alcohol storage area has 1 zone. The attached zone diagrams show the location of each of the inspection zones in the Tank Farm. All of the zones are described below.

A-31

- ZONE 1: Production pumps; 199 inspection points.
- ZONE 2: Compressor and Unloading pump; 129 inspection points.
- ZONE 3: Truck Unloading Station; 120 inspection points.
- ZONE 4: Delivery Pipe and Valves; 56 inspection points.
- ZONE 5: Tank Vent area; 22 inspection points.
- ZONE 6: Railcar Unloading Station; 93 inspection points.

TOTAL: 619 INSPECTION POINTS

A-46

- ZONE 1: Production pumps; 184 inspection points.
- ZONE 2: Truck Unloading Station; 87 inspection points.
- ZONE 3: Railcar Unloading Station; 114 inspection points.
- ZONE 4: Compressor; 73 inspection points.
- ZONE 5: Delivery Pipe and Valves; 92 inspection points.
- ZONE 6: Tank Vent area; 22 inspection points.

TOTAL: 572 INSPECTION POINTS

ISOPENTANE

ZONE 1: Production pump and Unloading pump; 200 inspection points.

ZONE 2: Tank Vent area; 40 inspection points.

ZONE 3: Delivery Pipe and Valves; 8 inspection points.

TOTAL: 248 INSPECTION POINTS

GASSING ROOMS

ZONE 1: Line 1 T-t-V Gassing Room; 125 inspection points.

ZONE 2: Line 2 T-t-V Gassing Room; 95 inspection points.

ZONE 3: Line 2 UCG Gassing Room; 73 inspection points.

ZONE 4: Line 4 T-t-V Gassing Room; 95 inspection points.

ZONE 5: Line 5 Sepro Gassing Room; 124 inspection points.

TOTAL: 512 INSPECTION POINTS

ALCOHOL

ZONE 1: Tanks, Pumps and Valves; 30 inspection points.

All maintenance tasks are formally organized using a series of 5-digit numbers and Frequency Codes as explained below.

Each maintenance task is identified by a 5-digit "PM Number". The first digit of this number signifies the craft that is responsible for the task:

- 10000 - Boiler Room Personnel
- 20000 - Electricians
- 30000 - HVAC
- 40000 - Millwrights
- 50000 - Pipefitters
- 60000 - Plant Services
- 70000 - Truck Shop
- 80000 - Maintenance Mechanics
- 90000 - Miscellaneous

The other four digits of the PM Number signify the date of issue of an individual maintenance activity order. The first two digits are the year (e.g. 92,93) and the last two are the week number (e.g. week 01 is the first week of the year and week 52 is the last week of the year).

The PM program also lists the inspection Frequency Code for each task. Because of the magnitude of individual components to inspect, it is impractical to inspect all components on the same day or in the same week and to repair them, if necessary, in the following week. Therefore, the frequency of inspection for each component is six months although inspections will be ongoing for several weeks throughout the year.

The PM Program uses the PM Numbers and Frequency Codes as the basis for all subsequent tracking activity. The PM Numbers and Frequency Codes are entered into the system. Using these numbers the next scheduled PM activity is calculated.

4. Program Description

The computer system is applied in the following manner. Each Friday the Facilities Department conducts a search in which the program determines all maintenance tasks that are to be issued the following week. Each maintenance task, which is referred to as "PM" for short, may include the routine inspection of a set of existing components, the initial maintenance efforts for a set of leaking components, or the follow-up maintenance efforts for a set of leaking components not fixed in the required time frame. The computer will print out all of the PMs due for the upcoming week by PM Number, i.e. a task by task basis.

Once the initial search is complete, the associated PM Documentation Sheets (sample copies attached) are pulled from the file for each PM. The Sheets are sent to the respective Department Supervisors who in turn issue the Sheets to the appropriate personnel for completion.

Upon receipt of the PM Documentation Sheet the department personnel have four weeks to inspect the component in question and seven working days thereafter to conduct any repairs on that component. Saturdays and Sundays are not considered working days. Repairs will be required for all leaking components. A leaking component is one which causes a reading of 1000 ppm or more on the portable hydrocarbon analyzer. All leaking components must be tagged with the identification tags available from the Facilities department. The department personnel must then submit a work order to the appropriate department and the repairs must be completed within 7 days. Provisions will be made for extenuating circumstances that will require more than 7 days (e.g. special parts order, production shutdown).

Once the PM task is complete, responsible personnel complete the PM Documentation Sheet and return it to the Facilities Department. A "complete" task is one in which the component was inspected and found not to leak, or in which the component was inspected, found to leak, and was repaired such that component no longer leaks.

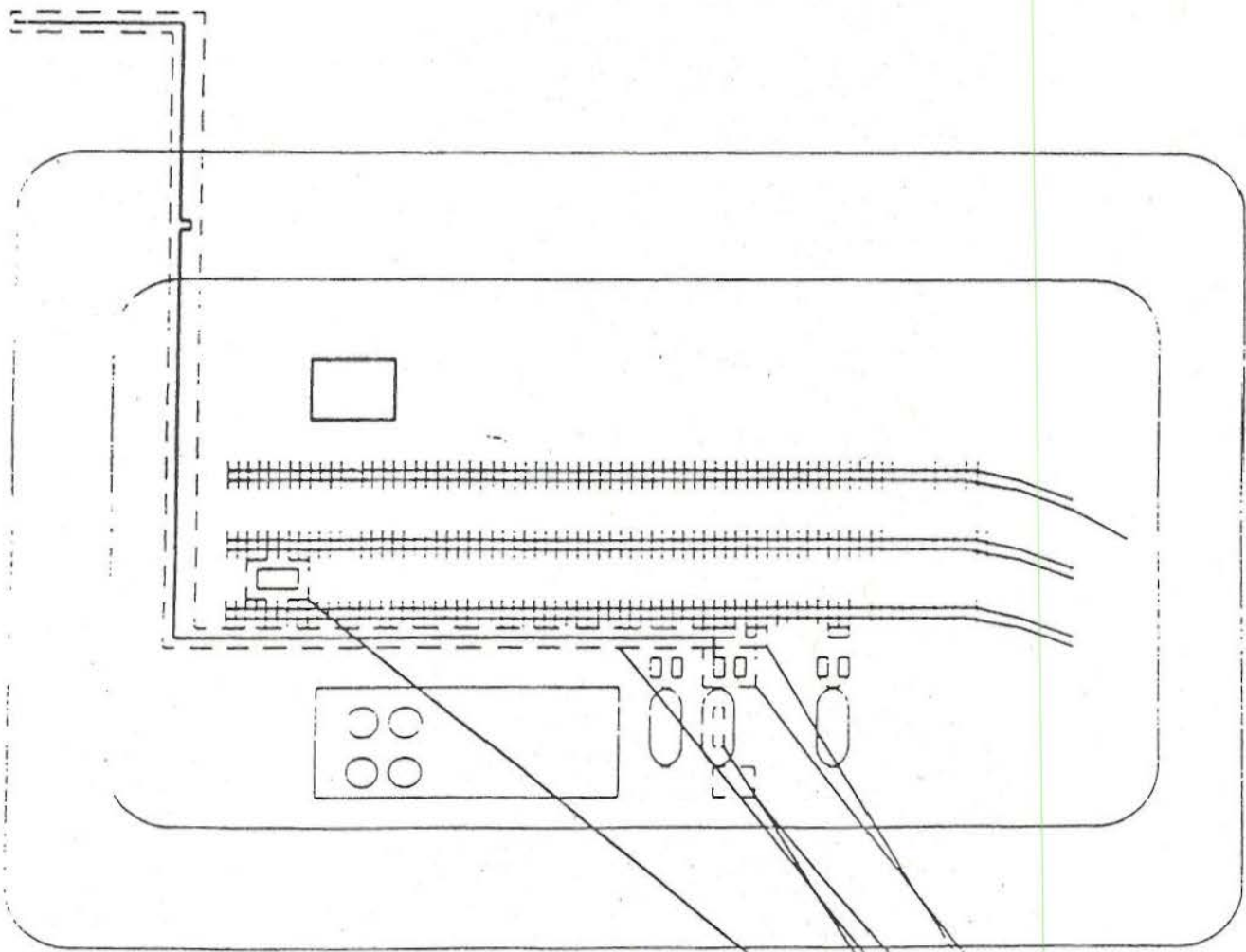
Once the Facilities Department receives the PM Documentation Sheet, it will enter the date of task completion into the computer. The new date for inspection or repair activity will then be automatically calculated.

The PM task is considered accomplished when the PM Documentation Sheet has been submitted to and recorded by the Facilities Department.

Any PM task that has not been accomplished within four weeks is considered late. Every week a report summarizing upcoming tasks, past due tasks and late tasks is circulated to all Facilities Department Supervisors. It is the Supervisors' responsibility to review the weekly summary sheets and to ensure that all PM tasks are accomplished. Late PM tasks are discussed at the weekly Facilities Planning Meeting.

All documentation will be retained at AMC for five years and then will be destroyed.

A31 LEAK TEST ZONES



- ZONE 1 25' - 30' FROM TOP OF WALL
- ZONE 2 25' - 30' FROM TOP OF WALL
- ZONE 3 25' - 30' FROM TOP OF WALL
- ZONE 4 25' - 30' FROM TOP OF WALL
- ZONE 5 25' - 30' FROM TOP OF WALL
- ZONE 6 25' - 30' FROM TOP OF WALL

The Gillette Company
Revision Date 2\14\96
Prepared by: D. Lescarbeau

Mainsaver PM Document #50206

50206* Zone #1 A-31-Pipefitter		CHARGE NO.	999-60-286
(=) WORK TO BE DONE	PIPEFITTER	WEEK NO.	_____
(v) OK		DATE	
(x) ADJ. MADE		CLOCK NO.	
(o) REPAIRS MADE	TANK FARM		
(*) PARTS ON ORDER	A-31 HYDROCARBON DELIVERY SYSTEM		
	ZONE #1 PRODUCTION PUMPS		
	199 POINTS		

SEMI-ANNUAL
WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP.
| |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS.
| |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND
| |
ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.
| |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF
| |
THE REPAIR.
| |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM.
| |

COMMENTS:

SIGNATURE INDICATES THAT ALL 199POINTS OF A31 ZONE #1 HAVE BEEN SURVEY
INSPECTED

SIGNATURE:	INSPECTION COMPLETED.
DATE:	NO LEAKAGE VIOLATIONS.

SIGNATURE:	INSPECTION COMPLETED.
DATE:	REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT
COMPLIANCE FILE.

UNCONTROLLED

The Gillette Company
Revision Date 2\14\96
Prepared by: D. Lescarbeau

Mainsaver PM Document #50207

50207* Zone#2 A-31
86

CHARGE NO. 999-60-2

(=) WORK TO BE DONE

PIPEFITTER

WEEK NO. _____

(v) OK

DATE

(x) ADJ. MADE

CLOCK NO.

(o) REPAIRS MADE

TANK FARM

(*) PARTS ON ORDER A-31 HYDROCARBON DELIVERY SYSTEM

ZONE #2 COMPRESSOR & UNLOADING PUMP
129 POINTS

SEMI-ANNUAL

WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP.
| |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS.
| |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND
| |
ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.
| |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF
| |
THE REPAIR.
| |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM.
| |

COMMENTS:

SIGNATURE INDICATES THAT ALL 129POINTS OF A31 ZONE #2 HAVE BEEN SURVEY
INSPECTED

SIGNATURE:

INSPECTION COMPLETE.

DATE:

NO LEAKAGE VIOLATIONS.

SIGNATURE:

INSPECTION COMPLETE.

DATE:

REPAIRS REQUIRED.

UNCONTROLLED

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT COMPLIANCE FILE.

UNCONTROLLED

The Gillette Company
 Revision Date 2\14\96
 Prepared by: D. Lescarbeau

Mainsaver PM Document #50208

50208* Zone #3 A-31 CHARGE NO. 999-60-2
 86

(=) WORK TO BE DONE PIPEFITTER WEEK NO. _____

(v) OK DATE
 (x) ADJ. MADE CLOCK NO.

(o) REPAIRS MADE TANK FARM

(*) PARTS ON ORDER A-31 HYDROCARBON DELIVERY SYSTEM

ZONE #3 TRUCK UNLOADING STATION
 120 POINTS

SEMI-ANNUAL

WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP.
 | |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS.
 | |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND
 | |
 ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.
 | |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF
 | |
 THE REPAIR.
 | |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM.
 | |

COMMENTS:

SIGNATURE INDICATES THAT ALL 120POINTS OF A31 ZONE #3 HAVE BEEN SURVEY
 INSPECTED

SIGNATURE: INSPECTION COMPLETED.

DATE: NO LEAKAGE VIOLATIONS

SIGNATURE: INSPECTION COMPLETE.

DATE: REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT
 COMPLIANCE FILE.

UNCONTROLLED

The Gillette Company
 Revision Date 2\14\96
 Prepared by: D. Lescarbeau

Mainsaver PM Document #50209

50209* Zone #4 A-31-Pipefitter CHARGE NO. 999-60-286
 (=) WORK TO BE DONE PIPEFITTER WEEK NO. _____
 (v) OK DATE
 (x) ADJ. MADE TANK FARM CLOCK NO.
 (o) REPAIRS MADE
 (*) PARTS ON ORDER Zone #4 A-31

ZONE #4 DELIVERY PIPE & VALVES
 56 POINTS

SEMI-ANNUAL
 WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP.
 | |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS.
 | |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND
 ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.
 | |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESED FOR CONFIRMATION OF
 THE REPAIR.
 | |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM.
 | |

COMMENTS:

SIGNATURE INDICATES THAT ALL 56POINTS OF A31 ZONE#4 HAVE BEEN SURVEY
 INSPECTED

SIGNATURE:	INSPECTION COMPLETE.
DATE:	NO LEAKAGE VIOLATIONS.
SIGNATURE:	INSPECTION COMPLETE.
DATE:	REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT
 COMPLIANCE FILE.

UNCONTROLLED

The Gillette Company
Revision Date 2\14\96
Prepared by: D. Lescarbeau

Mainsaver PM Document #50210

50210* Zone #5 A-31-Pipefitter TANK FARM

Charge # 999-60-286
WEEK NO. _____
DATE _____
CLOCK NO. _____

- (v) OK
- (x) ADJ. MADE

- (o) REPAIRS MADE
- (*) PARTS ON ORDER A-31 HYDROCARBON DELIVERY SYSTEM

ZONE #5 TANK VENT AREA
22 POINTS

SEMI-ANNUALY
WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP. |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS. |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR. |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESED FOR CONFIMATION OF THE REPAIR. |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM. |

COMMENTS:

SIGNATURE INDICATES THAT ALL 22 POINTS OF A31 ZONE#5 HAVE BEEN SURVEY INSPECTED

SIGNATURE:	INSPECTION COMPLETE.
DATE:	NO LEAKAGE VIOLATIONS.

SIGNATURE:	INSPECTION COMPLETE.
DATE:	REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT COMPLIANCE FILE.

UNCONTROLLED

The Gillette Company
 Revision Date 2\14\96
 Prepared by: D. Lescarbeau

Mainsaver PM Document #50211

50211* Zone#6 A-31 TANK FARM CHARGE NO. 999-60-28
 6

(=) WORK TO BE DONE PIPEFITTER WEEK NO. _____

(v) OK DATE
 (x) ADJ. MADE CLOCK NO.

(o) REPAIRS MADE
 (*) PARTS ON ORDER A-31 HYDROCARBON DELIVERY SYSTEM

ZONE #6 RAILCAR UNLOADING STATION
 93 POINTS

SEMI-ANNUAL
 WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP. |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS. |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND
 ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR. |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF
 THE REPAIR. |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM. |

COMMENTS:

SIGNATURE INDICATES THAT ALL 93POINTS OF A31 ZONE#6 HAVE BEEN
 SURVEY INSPECTED

SIGNATURE: INSPECTION COMPLETED.
 DATE: NO LEAKAGE VIOLATIONS.

SIGNATURE: INSPECTION COMPLETE.
 DATE: REPAIRS REQUIRED.

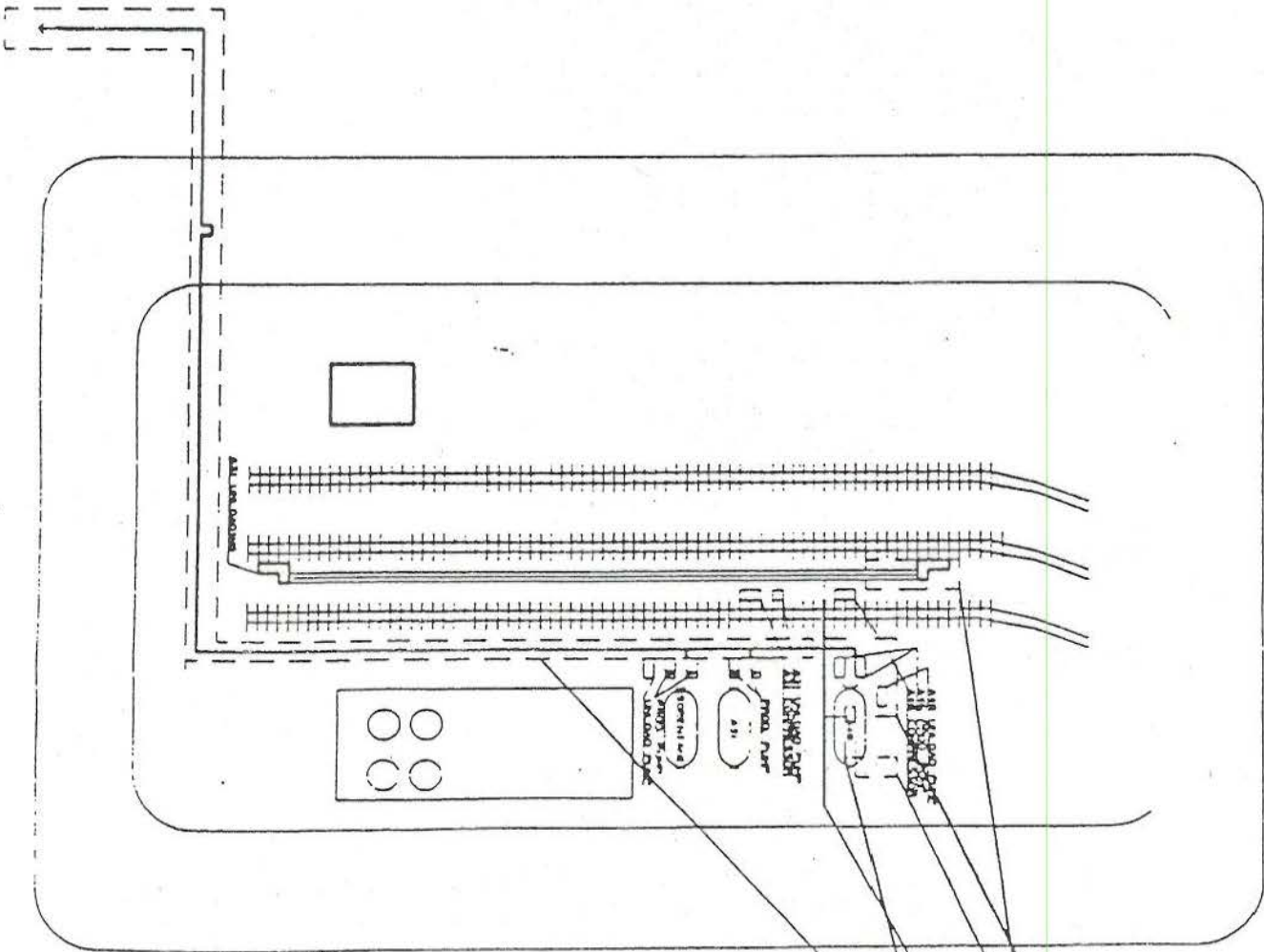
* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT

UNCONTROLLED

COMPLIANCE FILE.

UNCONTROLLED

AUG. 11, 1951 ZONES



- ZONE 1 AIR HANDLING UNIT
- ZONE 2 AIR CONTROL
- ZONE 3 AIR CONTROL
- ZONE 4 AIR CONTROL
- ZONE 5 AIR CONTROL
- ZONE 6 AIR CONTROL

1. AIR HANDLING UNIT
 2. AIR CONTROL
 3. AIR CONTROL
 4. AIR CONTROL
 5. AIR CONTROL
 6. AIR CONTROL

The Gillette Company
Revision Date 2\14\96
Prepared by: D. Lescarbeau

Mainsaver PM Document #50200

50200* A-46 Zone 6 Hyd.Del. Syst. TANK FARM CHARGE NO. 999-60-286
(=) WORK TO BE DONE PIPEFITTER WEEK NO. _____

- (v) OK
 - (x) ADJ. MADE
 - (o) REPAIRS MADE
 - (*) PARTS ON ORDER
- DATE
CLOCK NO

A-46 HYDROCARBON DELIVERY SYSTEM.

ZONE #6 TANK VENT AREA
22 POINTS

SEMI-ANNUAL
WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP. | |
 2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS. | |
 3. IF A LEAK IS DETECTED, IDENTIFY WITH A "REPAIR NEEDED" TAG AND ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR. | |
 4. UPON COMPLETION, THE COMPONENT MUST BE RETESTD FOR CONFIRMATION OF THE REPAIR. | |
 5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM. | |
- COMMENTS:

SIGNATURE INDICATES THAT ALL 22 POINTS OF A46 ZONE #6 HAVE BEEN INSPECTED

SIGNATURE: _____ INSPECTION COMPLETE.
DATE: _____ NO LEAKAGE VIOLATIONS.

SIGNATURE: _____ INSPECTION COMPLETE.
DATE: _____ REPAIRS REQUIRED.

* A COPY OF THIS signed PM SHEET MUST BE PLACED IN THE RACT COMPLIANCE FILE.

UNCONTROLLED

The Gillette Company
Revision Date 2\14\96
Prepared by: D. Lescarbeau

Mainsaver PM Document #50201

50201* Zone 1 A-46 TANK FARM CHARGE NO. 999-60-286
(=) WORK TO BE DONE PIPEFITTER WEEK NO. _____

(v) OK DATE
(x) ADJ. MADE CLOCK NO.

(o) REPAIRS MADE
(*) PARTS ON ORDER A-46 HYDROCARBON DELIVERY SYSTEM

ZONE #1 PRODUCTION PUMPS
184 POINTS

SEMI-ANNUAL
WORK DETAIL:

- 1.OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP. | |
 - 2.USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS. | |
 - 3.IF A LEAK IS DETECTED, IDENTIFY WITH A "REPAIR NEEDED" TAG AND ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR. | |
 - 4.UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF THE REPAIR. | |
 - 5.A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM. | |
- COMMENTS:

SIGNATURE INDICATES THAT ALL 184POINTS OF A46 ZONE#1 HAVE BEEN INSPECTED

SIGNATURE: INSPECTION COMPLETE.
DATE: NO LEAKAGE VIOLATIONS.

SIGNATURE: INSPECTION COMPLETE.
DATE: REPAIRS REQUIRED.

*A COPY OF THIS Signed PM SHEET MUST BE PLACED IN THE RACT COMPLIANCE FILE.

UNCONTROLLED

The Gillette Company
Revision Date 2\14\96
Prepared by: D. Lescarbeau

Mainsaver PM Document #50202

50202* Zone #2 A-46 TANK FARM CHARGE NO. 999-60-286
(=) WORK TO BE DONE PIPEFITTER WEEK NO. _____

(v) OK DATE
(x) ADJ. MADE CLOCK NO.
(o) REPAIRS MADE
(*) PARTS ON ORDER A-46 HYDROCARBON DELIVERY SYSTEM

ZONE#2 TRUCK UNLOADING SYSTEM
87 POINTS

SEMI-ANNUAL
Work Detail

- 1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP. | |
- 2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS. | |
- 3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED TAG AND ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR. | |
- 4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF THE REPAIR. | |
- 5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM. | |

COMMENTS:

SIGNATURE INDICATES THAT ALL 87POINTS OF A46 ZONE #2 HAVE BEEN SURVEY INSPECTED

SIGNATURE: INSPECTION COMPLETE.

DATE: NO LEAKAGE VIOLATIONS.

SIGNATURE: INSPECTION COMPLETE.

DATE: REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT COMPLIANCE FILE.

UNCONTROLLED

The Gillette Company
 Revision Date 2\14\96
 Prepared by: D. Lescarbeau

Mainsaver PM Document #50203

50203* Zone #3 A-46 TANK FARM CHARGE NO. 999-60-286
 (=) WORK TO BE DONE PIPEFITTER WEEK NO. _____

(v) OK DATE
 (x) ADJ. MADE CLOCK NO.
 (o) REPAIRS MADE
 (*) PARTS ON ORDER A-46 HYDROCARBON DELIVERY SYSTEM

ZONE#3 RAILCAR UNLOADING STATION
 114 POINTS

SEMI-ANNUAL
 WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP. | |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS. | |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED"
 TAG AND ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR. | |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR
 CONFIRMATION OF THE REPAIR. | |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM. | |

COMMENTS:

SIGNATURE INDICATES THAT ALL 114POINTS OF A46 ZONE #3 HAVE BEEN
 SURVEY INSPECTED

SIGNATURE: INSPECTION COMPLETE.
 DATE: NO LEAKAGE VIOLATIONS.

SIGNATURE: INSPECTION COMPLETE.
 DATE: REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT
 COMPLIANCE FILE.

UNCONTROLLED

The Gillette Company
Revision Date 2\14\96
Prepared by: D. Lescarbeau

Mainsaver PM Document #50204

50204* Zone 4 A-46 CHARGE NO. 999-60-286

(=) WORK TO BE DONE PIPEFITTER WEEK NO. _____

(v) OK DATE
(x) ADJ. MADE CLOCK NO.

(o) REPAIRS MADE TANK FARM
(*) PARTS ON ORDER A-46 HYDROCARBON DELIVERY SYSTEM

ZONE#4 COMPRESSOR AREA
73 POINTS

SEMI-ANNUAL
WORK DETAIL:

- 1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP. | |
- 2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS. | |
- 3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED"
TAG AND ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR. | |
- 4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR
CONFIRMATION OF THE REPAIR. | |
- 5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM. | |

COMMENTS:

SIGNATURE INDICATES THAT ALL 73POINTS OF A46 ZONE #4 HAVE BEEN
SURVEY INSPECTED

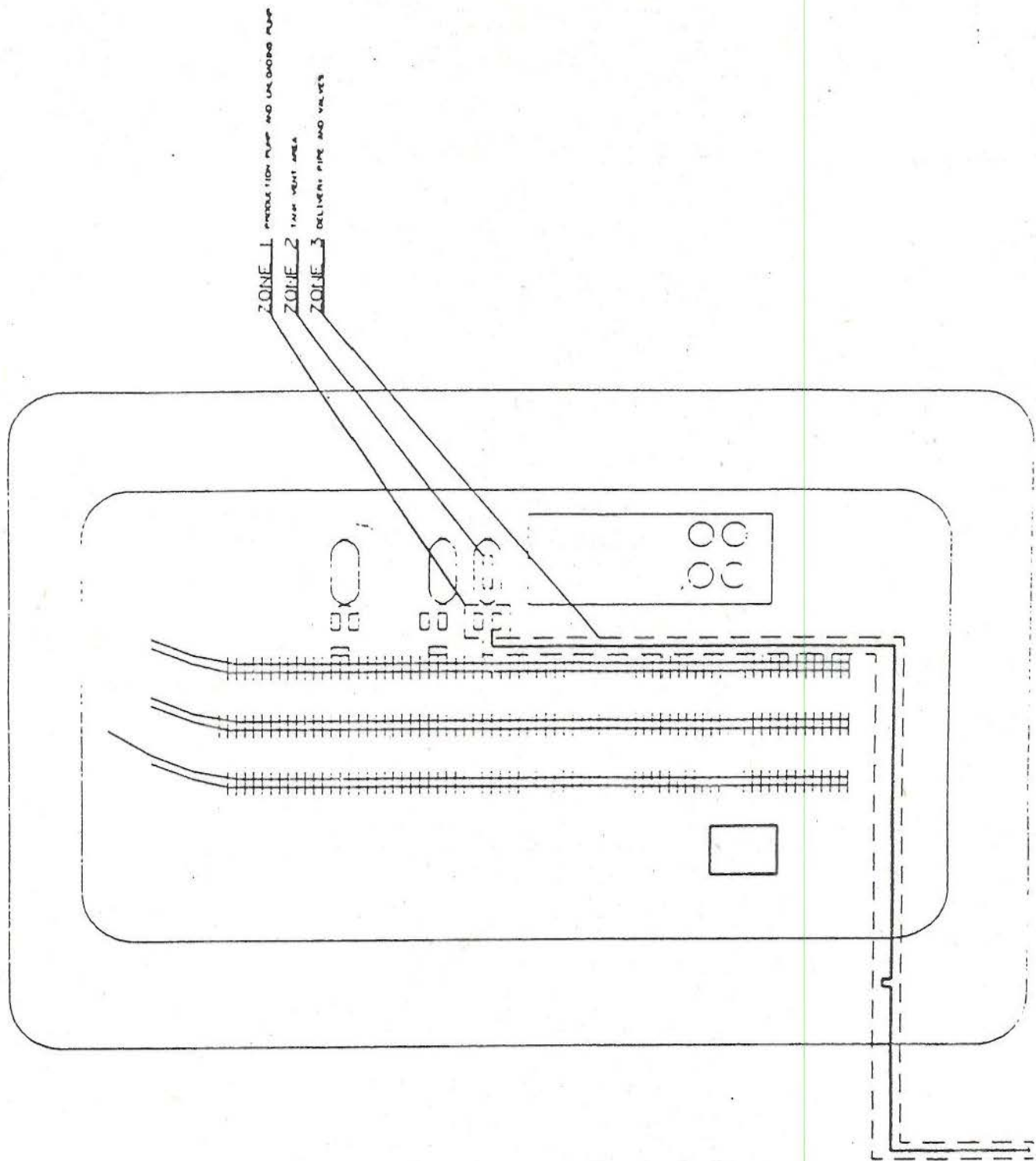
SIGNATURE: INSPECTION COMPLETE.
DATE: NO LEAKAGE VIOLATIONS.

SIGNATURE: INSPECTION COMPLETE.
DATE: REPAIRS REQUIRED

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT
COMPLIANCE FILE.

UNCONTROLLED

ISOPHANE INSPECTION ZONES



The Gillette Company
 Revision Date 2\14\96
 Prepared by: D. Lescarbeau

Mainsaver PM Document #50205

50205* Zone #5 A-46
 (=) WORK TO BE DONE PIPEFITTER CHARGE NO. 999-60-286
 WEEK NO. _____
 (v) OK TANK FARM DATE
 (x) ADJ. MADE CLOCK NO.
 (o) REPAIRS MADE
 (*) PARTS ON ORDER A-46 HYDROCARBON DELIVERY SYSTEM
 ZONE #5 ROOF AREA
 92 POINTS

SEMI-ANNUAL
 WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP. | |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS. | |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED"
 TAG AND ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR. | |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR
 CONFIRMATION OF THE REPAIR. | |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM. | |

COMMENTS:

SIGNATURE INDICATES THAT ALL 92POINTS OF A46 ZONE #5 HAVE BEEN
 SURVEY INSPECTED

SIGNATURE:

INSPECTION COMPLETE.

DATE:

NO LEAKEAGE VIOLATIONS.

SIGNATURE:

INSPECTION COMPLETE.

DATE:

REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT
 COMPLIANCE FILE.

UNCONTROLLED

The Gillette Company
Revision Date 2\14\96
Prepared by: D. Lescarbeau

Mainsaver PM Document #50212

50212* Zone #1 Isopentane TANK FARM CHARGE NO. 999-60-286
(=) WORK TO BE DONE PIPEFITTER WEEK NO. _____

(v) OK ISOPENTANE DATE
(x) ADJ. MADE HYDROCARBON DELIVERY SYSTEM CLOCK NO.

(o) REPAIRS MADE
(*) PARTS ON ORDER

ZONE #1 PRODUCTION PUMP & COMPRESSOR
200 POINTS

SEMI-ANNUAL
WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP.

| |

2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS.

| |

3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND
ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.

| |

4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF
THE REPAIR.

| |

5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM

| |

COMMENTS:

SIGNATURE INDICATES THAT ALL 200POINTS OF THE ISOPENTANE ZONE #1 HAVE B
EEN
SURVEY INSPECTED.

SIGNATURE:

INSPECTION COMPLETED.

DATE:

NO LEAKAGE VIOLATIONS

SIGNATURE:

INSPECTION COMPLETED.

DATE:

REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT
COMPLIANCE FILE.

UNCONTROLLED

The Gillette Company
 Revision Date 2\14\96
 Prepared by: D. Lescarbeau

Mainsaver PM Document #50213

50213* Zone #2 Isopentane CHARGE NO. 999-60-2
 86

(=) WORK TO BE DONE PIPEFITTER WEEK NO. _____

(v) OK ISOPENTANE DATE
 (x) ADJ. MADE HYDROCARBON DELIVERY SYSTEM CLOCK NO.

(o) REPAIRS MADE
 (*) PARTS ON ORDER TANK FARM

ZONE #2 TANK VENT AREA
 40 POINTS

SEMI-ANNUAL
 WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP.
 | |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS.
 | |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND
 ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.
 | |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF
 THE REPAIR.
 | |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM.
 | |
- | |

COMMENTS:

SIGNATURE INDICATES THAT ALL 40POINTS OF THE ISOPENTANE ZONE #2 HAVE BEEN
 SURVEY INSPECTED.

SIGNATURE: INSPECTION COMPLETE.

DATE: NO LEAKAGE VIOLATIONS.

SIGNATURE: INSPECTION COMPLETE.

DATE: REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT COMPLIAN

UNCONTROLLED

CE
FILE.

UNCONTROLLED

P.M. # 50214

TANK FARM

CHARGE NO. 999-60-286

(=) WORK TO BE DONE

(v) OK

(x) ADJ. MADE

) REPAIRS MADE

(-) PARTS ON ORDER

PIPEFITTER

ISOPENTANE

HYDROCARBON DELIVERY SYSTEM

ZONE #3 DELIVERY PIPE AND VALVES
8 POINTS

WEEK NO. _____

DATE DUE _____

DATE _____

CLOCK NO. _____

REGULAR HOURS _____

OVERTIME HOURS _____

~~QUARTERLY~~ Semi Annual
smc6/1/99

WORK DETAIL:

- | | |
|---|--|
| 1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP. | |
| 2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS. | |
| 3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND
ISSUE A MAINTENANCE WORK ORDER FOR THEW REPAIR. | |
| 4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF
THE REPAIR. | |
| 5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM. | |

COMMENTS:

SIGNATURE INDICATES THAT ALL 8 POINTS OF THE ISOPENTANE ZONE #3 HAVE BEEN SURVEY INSPECTED.

SIGNATURE: _____ INSPECTION COMPLETED.
 DATE: _____ NO LEAKAGE VIOLATIONS.

SIGNATURE: _____ INSPECTION COMPLETED.
 DATE: _____ REPAIRS REQUIRED.

P.M. # 50199

TANK FARM

CHARGE NO. 706-60-286

(=) WORK TO BE DONE

PIPEFITTER

WEEK NO. _____

(v) OK

DATE DUE _____

ADJ. MADE _____

DATE _____

REPAIRS MADE _____

CLOCK NO. _____

(*) PARTS ON ORDER _____

REGULAR HOURS _____

OVERTIME HOURS _____

ALCOHOL SYSTEM

22 VALVES

TWICE A YEAR

WORK DETAIL:

1. LUBRICATE GREASE FITTING ON NECK OF ALL VALVES	
2. EXERCISE ALL VALVES OPEN AND CLOSE EACH ONE	
3. TAKE A VISUAL CHECK OF THE AREA TO IDENTIFY ANY LEAKS	
* A MAINTENANCE WORK ORDER SHOULD BE SUBMITTED IF ANY ARE NOTED.	

REMARKS:

SIGNATURE INDICATES THAT ALL 22 VALVES HAVE BEEN PROPERLY PM'D

SIGNATURE: _____

DATE: _____

LEAK DETECTION AND REPAIR PROGRAM

- SCREENING PROCEDURE -

I. GENERAL TECHNIQUE

- A. Select a calibrated instrument from the Electrical Shop.
- B. Turn on instrument as per the steps outlined in the Owners Manual.
- C. Hold the probe perpendicular at all times to the surface being screened.
- D. Do not touch the surface with the probe.
- E. If an increase in the meter reading is observed, slowly move the probe along the surface until the maximum reading is obtained.
- F. At the point of the maximum reading, hold the probe for 10 seconds.
- G. If the maximum reading exceeds 1,000 ppm, tag the leak and write out a Shop Work Order Card.

II. VALVES

- A. Be certain to screen all stems and packing glands.
- B. Screen all inlet and outlet threaded connections.
- C. If any reading at any point exceeds 1,000 ppm, tag the leak and write out a Maintenance Work Order Card.

III. FLANGES

- A. Move the probe around the perimeter of the flange.
- B. Screen the threaded ends of the flange, if any.
- C. If any reading at any point exceeds 1,000 ppm, tag the leak and write out a Maintenance Work Order Card.

IV. PUMPS AND COMPRESSORS

- A. Move the probe around the circumference of the shaft where it exits the housing.
- B. If the shaft has a guard around it, do not remove the guard. Screen the guard where any leakage would be suspected.
- C. All other points on the pump or compressor housing where leakage could occur should also be screened.
- D. If any reading at any point exceeds 1,000 ppm, tag the leak and write out a Maintenance Work Order Card.

V. PRESSURE RELIEFS

- A. Do not approach a pressure relief device during any period of process upsets or other times when it is reasonable to assume the device may activate (e.g., a "full" tank on a very hot day).
- B. Screen the flanged base or seat as described in item III.
- C. If any reading at any point exceeds 1,000 ppm, tag the leak and write out a Maintenance Work Order Card.

VI. MISCELLANEOUS

- A. All threaded connections and open-ended lines must be screened.
- B. Move the probe around the circumference of threaded connections and at the center of open-ended lines.
- C. If any reading at any point exceeds 1,000 ppm, tag the leak and write out a Maintenance Work Order Card.

GASTECHTOR CALIBRATION PROCEDURE

- . The GasTech instruction manual is located in the Electronic's Shop.
 - . Only the GasTech trained electrician is allowed to calibrate the instrument.
1. Turn instrument on and allow it to warm up and stabilize, preferably for 5 minutes. Be sure batteries are charged sufficiently to read above the check mark.
 2. Open instrument case by loosening captive screw at front. Lift upper half of case slightly, move 1/4" to rear to disengage rear clamp; then separate the two halves. Locate COARSE ZERO potentiometer on underside of circuit board (marked "ZERO").
 3. Turn external PPM/LEL ZERO control to center of its span. Then turn COARSE ZERO potentiometer to bring meter to zero reading.
 4. To calibrate the LEL range, insert sample inlet tube into a vessel or other source of known calibrating gas. Watch meter and note highest reading. If it is incorrect, turn LEL SPAN potentiometer to give desired reading.
 5. For PPM calibration, follow same procedure with range switch in PPM position, and use PPM SPAN potentiometer. Before making this adjustment, allow system to warm up and stabilize thoroughly, and zero carefully in the PPM range.

NOTE

In the sensitive PPM range it is important that the humidity of the sample be the same as that of the air used for zero adjustment. If they are different, a significant offset in zero reading may be observed. To overcome this, a humidifier may be used for both zero and calibration tests, providing in water. The GasTech Calibration Kit is supplied complete with humidifier and accessories for this effect. See Appendix A of GasTech instruction manual.

6. If zero cannot be adjusted, or if reading cannot be set high enough, replace detector.

A-4 Safety Venting Records

Gillette	Title:	Date:	Rev:	Page:	Document no:
	Gas Room Venting and Changeover Log	6/03/99	1	1 of 2	RACT_004.DOC

PURPOSE: To maintain an accurate record of propellant release by date, time, type, reason, and amount.

APPLICABILITY: Every time propellant or blowing agent is released to the atmosphere, this log is to be used to document the event.

RESPONSIBILITY: The Gas Room Operator that is responsible for the event that results in the release to the atmosphere will sign and enter employee number in the appropriate column.

The Sr. Environmental Specialist will replace this log with a new one each month and keep this log in the RACT Compliance File. If you need a new log or have questions call x65074.

Beginning Date: _____

Line #: 1 2 4

DATE	TIME	FILLER	HEAD REPAIR	PUMP SYSTEM REPAIR	GAS CHANGE OVER	A31/152A	A-46	AB70	OPERATOR & Emp. No.
1.		PF UCG GEL							
2.		PF UCG GEL							
3.		PF UCG GEL							
4.		PF UCG GEL							
5.		PF UCG GEL							
6.		PF UCG GEL							
7.		PF UCG GEL							
8.		PF UCG GEL							
9.		PF UCG GEL							
10.		PF UCG GEL							

UNCONTROLLED

Losses per event are approximately as follows:

Gas Head Repair: 1.7 lbs

Gas Changeover: 60 lbs

Pump System Repair: 50 lbs

Gas Room Venting: 60 lbs

Accurate values are kept by the Sr. Environmental Specialist on the computer spreadsheet.

Beginning Date: _____

Line #: 1 2 4

DATE	TIME	FILLER	HEAD REPAIR	PUMP SYSTEM REPAIR	GAS CHANGE OVER	A31/152A	A-46	AB70	OPERATOR & Emp. No.
11.		PF UCG GEL							
12.		PF UCG GEL							
13.		PF UCG GEL							
14.		PF UCG GEL							
15.		PF UCG GEL							
16.		PF UCG GEL							
17.		PF UCG GEL							
18.		PF UCG GEL							
19.		PF UCG GEL							
20.		PF UCG GEL							

Losses per event are approximately as follows:

Gas Head Repair: 1.7 lbs

Gas Changeover: 60 lbs

Pump System Repair: 50 lbs

Gas Room Venting: 60 lbs

Accurate values are kept by the Sr. Environmental Specialist on the computer spreadsheet.

UNCONTROLLED

**A-5 Standard Operating and Standard Maintenance
Procedures for the Propellant Recovery System**

Gillette	Title:	Date:	Rev:	Page:	Document no:
	Tank Farm Propellant Recovery System	11-9-98	A	1 of 1	RACT_003.DOC

APPROVALS

DATE

Manager Stores/Warehousing /Tank Farm:	
Asst. Manager Stores/Warehousing/Tank Farm:	
Sr. Environmental Specialist:	

PURPOSE:

- To minimize VOC emissions from the Tank Farm during propellant unloading.
- To comply with the AMC RACT Plan.

APPLICABILITY:

- Whenever an A-31 propellant railcar is to be unloaded in the Tank Farm.

RESPONSIBILITY:

- The manager of the Tank Farm shall ensure that all Tank Farm Operators are aware of this procedure.
- The Tank Farm Operators shall follow this procedure each time an A-31 railcar is unloaded in the Tank Farm.

PROCEDURE:

1. Prior to any A-31 railcar being unloaded, the Tank Farm Operator shall use the A-31 Recovery Compressor to transfer propellant that may be trapped in the lines to the storage tank. This will reduce the amount of VOCs emitted to the atmosphere by eliminating the need to vent the trapped gas.

UNCONTROLLED

50206* Zone #1 A-31-Pipefitter CHARGE NO. 999-60-286
(=) WORK TO BE DONE PIPEFITTER WEEK NO. _____

(v) OK DATE
(x) ADJ. MADE CLOCK NO.

(o) REPAIRS MADE TANK FARM

(*) PARTS ON ORDER A-31 HYDROCARBON DELIVERY SYSTEM

ZONE #1 PRODUCTION PUMPS
199 POINTS

SEMI-ANNUAL
WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP.
| |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS.
| |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND
| |
ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.
| |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF
| |
THE REPAIR.
| |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM.
| |

COMMENTS:

SIGNATURE INDICATES THAT ALL 199POINTS OF A31 ZONE #1 HAVE BEEN SURVEY
INSPECTED

SIGNATURE: INSPECTION COMPLETED.

DATE: NO LEAKAGE VIOLATIONS.

SIGNATURE: INSPECTION COMPLETED.

DATE: REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT
COMPLIANCE FILE.

UNCONTROLLED

50207* Zone#2 A-31
86

CHARGE NO. 999-60-2

(=) WORK TO BE DONE

PIPEFITTER

WEEK NO. _____

(v) OK

DATE

(x) ADJ. MADE

CLOCK NO.

(o) REPAIRS MADE

TANK FARM

(*) PARTS ON ORDER A-31 HYDROCARBON DELIVERY SYSTEM

ZONE #2 COMPRESSOR & UNLOADING PUMP
129 POINTS

SEMI-ANNUAL

WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP.
| |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS.
| |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND
| |
ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.
| |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF
| |
THE REPAIR.
| |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM.
| |

COMMENTS:

SIGNATURE INDICATES THAT ALL 129POINTS OF A31 ZONE #2 HAVE BEEN SURVEY
INSPECTED

SIGNATURE:

INSPECTION COMPLETE.

DATE:

NO LEAKAGE VIOLATIONS.

SIGNATURE:

INSPECTION COMPLETE.

DATE:

REPAIRS REQUIRED.

UNCONTROLLED

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT COMPLIANCE FILE.

UNCONTROLLED

50208* Zone #3 A-31
86

CHARGE NO. 999-60-2

(=) WORK TO BE DONE

PIPEFITTER

WEEK NO. _____

(v) OK

DATE

(x) ADJ. MADE

CLOCK NO.

(o) REPAIRS MADE

TANK FARM

(*) PARTS ON ORDER A-31 HYDROCARBON DELIVERY SYSTEM

ZONE #3 TRUCK UNLOADING STATION
120 POINTS

SEMI-ANNUAL

WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP.
| |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS.
| |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND
| |
ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.
| |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF
| |
THE REPAIR.
| |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM.
| |

COMMENTS:

SIGNATURE INDICATES THAT ALL 120POINTS OF A31 ZONE #3 HAVE BEEN SURVEY
INSPECTED

SIGNATURE:

INSPECTION COMPLETED.

DATE:

NO LEAKAGE VIOLATIONS

SIGNATURE:

INSPECTION COMPLETE.

DATE:

REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT
COMPLIANCE FILE.

UNCONTROLLED

The Gillette Company
Revision Date 2\14\96
Prepared by: D. Lescarbeau

Mainsaver PM Document #50209

50209* Zone #4 A-31-Pipefitter CHARGE NO. 999-60-286
(=) WORK TO BE DONE PIPEFITTER WEEK NO. _____

(v) OK DATE
(x) ADJ. MADE TANK FARM CLOCK NO.
(o) REPAIRS MADE
(*) PARTS ON ORDER Zone #4 A-31

ZONE #4 DELIVERY PIPE & VALVES
56 POINTS

SEMI-ANNUAL
WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP.
| |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS.
| |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND
ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.
| |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESED FOR CONFIRMATION OF
THE REPAIR.
| |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM.
| |

COMMENTS:

SIGNATURE INDICATES THAT ALL 56POINTS OF A31 ZONE#4 HAVE BEEN SURVEY
INSPECTED

SIGNATURE: INSPECTION COMPLETE.
DATE: NO LEAKAGE VIOLATIONS.

SIGNATURE: INSPECTION COMPLETE.
DATE: REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT
COMPLIANCE FILE.

UNCONTROLLED

The Gillette Company
Revision Date 2\14\96
Prepared by: D. Lescarbeau

Mainsaver PM Document #50210

50210* Zone #5 A-31-Pipefitter TANK FARM

Charge # 999-60-286
WEEK NO. _____
DATE _____
CLOCK NO. _____

(v) OK
(x) ADJ. MADE

(o) REPAIRS MADE
(*) PARTS ON ORDER A-31 HYDROCARBON DELIVERY SYSTEM

ZONE #5 TANK VENT AREA
22 POINTS

SEMI-ANNUALY
WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP. |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS. |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND
ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR. |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESED FOR CONFIMATION OF
THE REPAIR. |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM. |

COMMENTS:

SIGNATURE INDICATES THAT ALL 22 POINTS OF A31 ZONE#5 HAVE BEEN
SURVEY INSPECTED

SIGNATURE:
DATE:

INSPECTION COMPLETE.
NO LEAKAGE VIOLATIONS.

SIGNATURE:
DATE:

INSPECTION COMPLETE.
REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT
COMPLIANCE FILE.

UNCONTROLLED

50211* Zone#6 A-31 TANK FARM CHARGE NO. 999-60-28

6

(=) WORK TO BE DONE PIPEFITTER WEEK NO. _____

(v) OK DATE
(x) ADJ. MADE CLOCK NO.

(o) REPAIRS MADE
(*) PARTS ON ORDER A-31 HYDROCARBON DELIVERY SYSTEM

ZONE #6 RAILCAR UNLOADING STATION
93 POINTS

SEMI-ANNUAL

WORK DETAIL:

1. OBTAIN CALIBRATED GAS DETECTION UNIT FROM PIPE SHOP. |
2. USING PRESCRIBED METHOD, INSPECT ALL POINTS FOR LEAKS. |
3. IF A LEAK IS DETECTED, IDENTIFY LEAK WITH A "REPAIR NEEDED" TAG AND ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR. |
4. UPON COMPLETION, THE COMPONENT MUST BE RETESTED FOR CONFIRMATION OF THE REPAIR. |
5. A FACILITIES EXCEPTION REPORT WILL BE ATTACHED TO THE PM. |

COMMENTS:

SIGNATURE INDICATES THAT ALL 93POINTS OF A31 ZONE#6 HAVE BEEN SURVEY INSPECTED

SIGNATURE: INSPECTION COMPLETED.
DATE: NO LEAKAGE VIOLATIONS.

SIGNATURE: INSPECTION COMPLETE.
DATE: REPAIRS REQUIRED.

* A COPY OF THIS COMPLETED PM SHEET MUST BE PLACED IN THE RACT

UNCONTROLLED

COMPLIANCE FILE.

UNCONTROLLED

A-6 Tank Farm Truck Disconnect Losses

Gillette	Title:	Date:	Rev:	Page:	Document no:
	Tank Farm Operator Tank Truck Disconnects	11-9-98	A	1 of 1	RACT_002.DOC

<i>APPROVALS</i>	<i>DATE</i>
Tank Farm Manager:	
Sr. Env. Specialist:	

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PURPOSE:

- To minimize VOC emissions from Tank Farm truck disconnects.
- To comply with the AMC RACT Plan.

APPLICABILITY:

- Whenever an alcohol or propellant delivery truck is unloaded in the Tank Farm.

RESPONSIBILITY:

- The manager of the Tank Farm shall ensure that all Tank Farm Operators are aware of this procedure.
- The Tank Farm Operators shall document all alcohol and propellant delivery truck disconnects.
- The Sr. Environmental Specialist shall review the Truck Disconnect Log and report accordingly.

PROCEDURE:

1. Whenever possible deliveries of alcohol and propellant shall be made by use of railcars. This will minimize the number of disconnects and thus reduce VOC emissions.
2. All hatches on the trucks will be kept closed until off loading is to begin.
3. All hatch gaskets will be inspected by the Tank Farm Operator. Any questionable hatch gaskets will be reported to the vendor.
4. Once off loading is completed the hoses used will be capped to minimize the amount of VOC emitted.

COMPLETED BY

DATE

CHECKED BY

DATE

UNCONTROLLED COPY

TRUCK DISCONNECTS

DATE	MATERIAL	# OF DISCONNECTS	LOSS PER DISCONNECT	TOTAL LOSS	OPERATOR INITIALS

A-7 Liquid Mix Room Alcohol Vessel Hatch Seal
Maintenance

M. # 90300

LIQUID MIX ROOM

CHARGE NO. _____

=) WORK TO BE DONE

CHEMICAL MIXER

WEEK NO. _____

v) OK

DATE DUE _____

DJ. MADE

ALCOHOL SYSTEM

DATE _____

REPAIRS MADE

CLOCK NO. _____

*) PARTS ON ORDER

REGULAR HOURS _____

ALCOHOL VESSEL HATCH SEALS

OVERTIME HOURS _____

EMI-ANNUALLY

WORK DETAIL:

. OPEN HATCH.	
. OBSERVE HATCH SEAL FOR CRACKING AND PROPER SEATING.	
. IF NOT PROPERLY SEATED, CORRECT IT. IF RESEATING IS NOT POSSIBLE, IDENTIFY WITH A "REPAIR NEEDED" TAG AND ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.	
. IF SEAL IS DETERIORATED, IDENTIFY WITH A "REPAIR NEEDED" TAG AND ISSUE A MAINTENANCE WORK ORDER FOR THE REPAIR.	
. REPEAT PROCEDURE FOR ALL ALCOHOL MIX AND STORAGE TANKS.	

COMMENTS:

SIGNATURE INDICATES THAT ALL ALCOHOL VESSELS HAVE BEEN INSPECTED

SIGNATURE: _____ INSPECTION COMPLETED.

DATE: _____ NO LEAKAGE VIOLATIONS.

SIGNATURE: _____ INSPECTION COMPLETED.

DATE: _____ REPAIRS REQUIRED.

A-8 Tank Farm Operator Training Program

Gillette	Title:	Date:	Rev:	Page:	Document no:
	New Tank Farm Operator Training	11-9-98	A	1 of 1	RACT_001.DOC

APPROVALS

DATE

Manager Stores/Warehouse/Tank Farm :	
Asst. Manager Stores/Warehouse/Tank Farm:	
Sr. Environmental Specialist:	

PURPOSE:

- To minimize VOC emissions from the Tank Farm.
- To comply with the AMC RACT Plan.

APPLICABILITY:

- Whenever a new person is assigned to the Tank Farm for a period of longer than one month.
- If the same person is reassigned to the Tank Farm within the same calendar year, retraining will not be required.

RESPONSIBILITY:

- The Manager of the Tank Farm shall notify the Sr. Environmental Specialist whenever a person is to be assigned to the Tank Farm for more than one week.
- The Manager of the Tank Farm shall not allow an untrained employee to be solely responsible for activities in the Tank Farm.
- The Sr. Environmental Specialist shall provide the training to the newly assigned person within the first week of the assignment.

PROCEDURE:

1. The AMC RACT Plan shall be reviewed with the newly assigned person. Included in the training will be:
 - History of the RACT Plan
 - Purpose of the RACT Plan
 - Significance of the RACT Plan
2. Emphasis shall be placed on items pertaining to the Tank Farm.
 - Railcar Disconnects
 - Truck Disconnects
 - A-31 Recovery System
 - Documentation
3. The attendance sheet will be submitted to the Tank Farm Manager. A copy will be kept by the Sr. Environmental Specialist.

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