PLAINTIFF'S
EXHIBIT
DUP-1446

cc: R. A. Shinn
G. E. Lynskey
J. E. Sylvanus
R. G. Little
W. L. Kremer
J. R. Cohen

Edge Moor, Delaware
March 28, 1983

E. C. HENZE
M. J. DUNBAR
J. P. HOLBACK
J. T. CAVANAUGH
J. T. GAWINSKI
W. J. ZERBE
A. R. PALLADINETTI
R. L. COPPOLA
J. F. LANE
J. J. SHEA
K. R. FARRARE
W. J. BULLEN
W. A. RAMMEL
R. L. BOONE
A. J. FLEISCHUT
M. A. ZAREBICKI
K. A. THOMAS
A. W. ELLIS
F. R. HAMM
N. A. KIBLER
J. D. GRACIANO

J. S. DIXON
V. P. BEIRIGER
J. M. SCHULER
W. D. WHITESELL
W. A. CHADWICK
H. G. SELHEIMER
J. SWIEDER
R. D. GILLESPIE
R. O. JONES
C. T. MELVIN
E. N. BROWN
E. T. O'NEILL
W. G. KIRK
J. BOLINSKI
L. A. JEWELL
R. BULLOCK
C. KOTOWSKI
K. RANGAN
J. D. SHUKITT
G. W. MARTIN
C. E. PRICE

G. W. TAYLOR
M. R. RICHARD
F. W. SKINNER
T. F. DAVID
F. F. WHAM
S. W. WITKOWSKI
H. B. COULTER
R. C. BURGE
K. A. BERKLEY
J. C. FLOWERS
E. R. ROBERTS
E. V. GREGSON
W. W. SYMONDS
A. L. STUMPF
I. J. TIKELLIS, MD
R. W. STOWE
B. A. CAPRA
R. K. URIAN
L. L. HYNSON
L. F. GRACE

ASBESTOS REMOVAL PROCEDURE

Attached for your use is a copy of the latest Asbestos Removal Procedure and an outline summary of the Procedure. Please destroy any other outdated copies you may have in your files.

As you know, asbestos dust is a proven respiratory hazard. Proper handling procedures must be followed to protect employees from exposure to airborne asbestos fibers. This procedure should be reviewed with all employees with potential for asbestos exposure.

N. Liberman
N. LIBERMAN
SENIOR SUPERVISOR SAFETY AND HEALTH

NL/db
Attachment

DUP 1120150

DU 055176

PROCEDURE
CONTROL OF ASBESTOS DUST

1. PURPOSE

Prescribe methods for controlling, measuring, and eliminating exposure to asbestos dust.

2. SCOPE

Applicable with airborne dust originating from asbestos and asbestos-impregnated materials.

3. SOURCE OF EXPOSURE

A. All thermal insulation including calcium silicate, installed prior to 1972 could contain asbestos fibers. This could be a source of high exposure during dismantling.

B. Other asbestos-bearing materials are possible sources of exposure in varying degrees, for example, heat suits, gloves, laboratory hot pads, transite board and pipe, asbestos board, asbestos cloth, some Haveg pipe compositions and fittings, etc.

C. There are some asbestos-bearing materials used at Edge Moor in which the fibers are contained and are not a source of airborne dust, for example, braided and molded packing, fibrous adhesive, compressed asbestos gasket material, Garlock, etc. However, these items will be cataloged and emissions supported by air samples of the work area where they are used.

4. EXPOSURE LIMITS

A. Asbestos dust concentration limits are an 8-hour, time-weighted average (T.W.A.)** of two fibers, longer than five microns, per cubic centimeter of air* and;

B. A ceiling concentration of 10 fibers, longer than five microns, per cubic centimeter of air*.

C. Occupational exposure defined as: An 8-hour T.W.A. of more than 0.1 fibers, longer than five microns, per cubic centimeter of air*.

**Average concentration occurring over a period of 8 hours.

*All determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter method at 400-450 x magnification (4 millimeter objective) phase contrast illumination.

PROCEDURE - CONTROL OF ASBESTOS DUST (Continued)

5. REGULATORY REQUIREMENTS

A. RENOVATION

Involves removing or stripping away asbestos from pipes, ducts, boilers, tank reactors, furnaces, or structural members.

Prior notification is required if quantity removed is over 80 meters (260 lineal feet) of pipe or 15 square meters (160 square feet) of ducts and equipment.

1. Planned & Scheduled - Base quantity on each job.

2. Planned & Unscheduled - Base quantity on projection over one year.

3. Emergency - Base quantity on each job.

B. DEMOLITION

Involves removing or stripping away asbestos from pipes, ducts, boilers, tank reactors, furnaces, or structural members. If a load-supporting structural member is actually removed or wrecked, the operation is not a renovation, but a demolition.

Notification is required on all demolitions both large and small.

C. NOTIFICATION

Environmental Coordinator will make notification in writing.

Mechanical Supervisor responsible for job must provide information per Attachment A to Environmental Coordinator at least 15 days prior to starting job. Notification must be given to the State of Delaware Air Resources Section at least 10 days prior to commencing actual removal.

In case of emergencies, notification must be made as soon as possible before starting job. Ten day requirement does not apply.

6. CONTROL OF ASBESTOS DUST

A. Exercise care when handling materials which are potential sources of asbestos dust. Local exhaust ventilation and similar controls shall be used to meet the exposure limits prescribed by Section 4, if possible. Prescribed safety equipment must be worn on all jobs where exposure to asbestos dust is possible.

PROCEDURE - CONTROL OF ASBESTOS DUST (Continued)

6. CONTROL OF ASBESTOS DUST (Continued)

B. When cutting asbestos-containing material, use tools that will not make dust, e.g., shears, knives or other similar cutters. If asbestos-containing material is cut with a saw, the asbestos procedure must be followed.

C. Respirators (Section 7) and special clothing (Section 8-A) shall be worn by employees engaged in removal or demolition of asbestos insulation or covering.

D. Whenever material which contains asbestos is to be removed and discarded, it is to be thoroughly wetted down prior to and during removal*. Removal methods which may cause dust should not be employed. The removal area shall be roped-off and proper signs posted (Section 6-G).

E. During cleanup of asbestos materials, no dry sweeping shall be performed nor any air blowdown used. Use a vacuum cleaner or wet down before sweeping. If a vacuum cleaner is to be used, it shall be fitted with a filter which will contain asbestos fibers at the filter exhaust to meet the exposure limits prescribed in Section 4. Approved vacuum cleaner available at Storeroom and another one is kept in the Plant Garage. The vacuum cleaner in Plant Garage may be used in the Plant if Storeroom vacuum cleaner is O/S (See Section 12).

F. Asbestos waste shall be collected in damp or wetted condition and placed in a sealed, impermeable plastic bag. Additional bags can be obtained from the Respirator Shop. The bag shall be identified with special warning label and transported to the designated asbestos disposal box. The coveralls and gloves are to be disposed of at the end of each day in the same manner as the asbestos waste.

*Best results are achieved by removing the outer covering after the initial wetdown and rewetting the area to be worked on. Water spray cans are available through the Storeroom.

G. The work area shall be roped-off (barricaded) and caution signs conforming to Engineering Standard S-4-T 12.1 shall be posted at all approaches. Roped-off limits shall be placed at a sufficient distance to prevent bystander exposure and permit a person to read the signs and take necessary precautions before entering the area.

H. Chemical contaminated asbestos or asbestos-bearing materials require special considerations and should be handled by adequately trained personnel. It is the building custodian's (Operations) responsibility who may perform the work.

PROCEDURE - CONTROL OF ASBESTOS DUST (Continued)

6. CONTROL OF ASBESTOS DUST (Continued)

I. Polyvinyl Alcohol/Boric Acid aqueous solutions which are available at the Storeroom can be used to seal damaged or exposed insulation. Instructions for use are at the Storeroom with the material.

7. RESPIRATORY EQUIPMENT

A. Respiratory protection shall be provided to all personnel in areas where the permissible exposure limits may be exceeded per Section 4-A.

B. Mechanical filter-type respirators are required when the T.W.A. or ceiling concentrations are not expected to exceed 10 times the limits stated in Section 4-A. (Comfo II - Type "H" filter available at tool crib.) If Comfo II respirators are issued each cartridge must be disposed of at end of each day or job completion (whichever may occur first) and so indicated in respirator cartridge log book.

C. Atmosphere-supplying, positive-pressure respirators are required when the 8-hour T.W.A. or 15-minute T.W.A. concentrations are expected to exceed 10 times the limit in Section 4-A or in areas where a complete wetdown is impossible, an airline mask or self-contained airpack mask is required. See Plant Respirator Program for guidelines on use and care of respiratory equipment.

D. Each employee who may use a respirator shall be instructed in its use and in testing it for proper fit. Fit testing is performed in the Respiratory Shop. He shall test it for proper fit prior to each use.

8. HYGIENE

A. Special clothing ("Tyvek" coveralls with hood and foot coverings) shall be provided (available at Storeroom) for employees exposed to concentrations which may exceed the limits in Section 4 and during all removal, demolition or spraying operations. Plastic gloves are also available at the Storeroom and must be worn when handling asbestos material.

B. Food, gum, tobacco, or other material which may be placed in the mouth shall not be kept or consumed in work areas where asbestos is being handled.

C. Annual medical examinations are required for employees who are or might be exposed to airborne concentrations of asbestos fibers greater than 0.1 fibers/cc (8-hour T.W.A.).

PROCEDURE - CONTROL OF ASBESTOS DUST (Continued)

9. SAMPLING

A. It may be necessary to obtain material samples or air samples for reasons such as:

(1) Material Samples - An employee may be assigned to a job working with a material which may contain asbestos fibers. A material analysis must be made to insure that proper protection measures are instituted prior to, during, and after the job, and/or,

(2) Air Samples - There is reason to suspect that employees may be exposed to airborne asbestos fibers because:

(a) They are working with an asbestos-bearing material and a personal sample is needed to determine exposure level.

(b) Because of the location and/or condition of asbestos-bearing materials, employees may be exposed to airborne fibers.

B. When the need for air samples is indicated (Section 9-A), contact Safety Supervisor, give a description of the work requested and the location. Follow this with a formal written request (Don't Say It....).

C. Representative samples have indicated that the procedures followed by the Mechanical Department in the handling of asbestos-bearing materials have kept exposure well below the limits set by the Occupational Safety and Health Administration (O.S.H.A.). Continued sampling and air monitoring will be maintained throughout the department. The Safety and Health Group will perform the monitoring, supply the equipment necessary, and provide a written report of the sampling results to the mechanical area supervision who requested the sampling. Each major dismantlement job should be monitored for airborne concentrations. All jobs should be considered for monitoring and jobs of two hours or greater duration should be monitored for airborne concentrations. The mechanical area responsible shall request monitoring and where employees are exposed to asbestos dust, request personnel monitoring to determine the employee's exposure. Sampling must be taken in a frequency pattern to represent accurately the employees exposure over his work period. Sampling shall include area and personnel monitoring.

Personnel Monitoring:

D. As soon as practical, but not later than five days after receipt of sampling results, the Senior Supervisor, Mechanical, or his designate shall notify in writing Attachment B any employee found to have airborne concentrations in excess of the limits found in Section 4-A of this procedure. The notification form shall be filled out in its entirety and copies

DUP 1120155

PROCEDURE - CONTROL OF ASBESTOS DUST (Continued)

10. RECORDS

A. Medical records of persons working in asbests airborne environment are maintained by the Edge Moor Medical Section.

B. Environmental-Personnel Monitoring Records are maintained by the Safety & Health Group.

11. ELIMINATION OF ASBESTOS IMPREGNATED MATERIALS

A. All mechanical personnel shall continue to seek asbestos-free substitutes for asbestos-containing materials.

12. VACUUM CLEANER

The approved vacuum cleaner to be used for asbestos removal cleanup is a NILFISK Model GS83. Vacuum cleaner is equipped as follows:

- Remote shaking handle to allow filter shakedown without operator exposure to dusts collected.
- High efficiency particularate air (HEPA) filters and MICROFILTERS designed for asbestos use.
- MANOMETER to indicate buildup of dust on filter.
- Polyliner in dust container for dust-free disposal of contents.
- Floor nozzle or crevice nozzle.

Persons using vacuum cleaner are responsible for completely cleaning it before returning to Storeroom. Cleaning vacuum cleaner includes:

- Shake down filter thoroughly.
- Empty and damp clean dust container.*
- Damp wipe all exterior surfaces.
- If HEPA filters or microfilters need cleaning, use vacuum cleaner in garage to clean filters.

* See vacuum cleaner instruction for detail and protective clothing requirements.

PROCEDURE - CONTROL OF ASBESTOS DUST (Continued)

13. REFERENCES

A. This procedure is based on:

(1) Du Pont Engineering Standard S-4-T

(2) O.S.H.A. Regulations, Section 1910:1001

(3) National Emissions Standard for Asbestos (40 CFR 61.20 - 61.25); and

(4) O.S.H.A. Program Directive #300-16

(5) Edge Moor Plant Respirator Program and A.N.S.I. Z88.2

/ela
Revised 12/29/81

ASBESTOS PROCEDURE SUMMARY

I. EMPLOYEE PROTECTION

A. Rope-off and special sign

B. Wet down

C. Clothing - Tyvek suits, hoods, boots and plastic gloves.

D. Masks

1. Ceiling concentration not expected to exceed 10 times limits (Section 4-A of Procedure), use Comfo II with Type "H" respirator cartridge.

2. Self-contained breathing apparatus must be used if exposure is expected to exceed 10 times limits (Section 4-A or Procedure).

E. Monitoring/Sampling - If needed, contact Safety & Health Group, Extensions 118, 183, or 240.

F. The following are not permitted:

1. Dry sweeping
2. Air blowing
3. Power cutting of asbestos-containing material
4. Retention or consumption of food, gum, tobacco, etc, in an area where asbestos material is being handled.

II. ENVIRONMENTAL PROTECTION

Prior notice of all demolitions and large renovations must be given to the State. Mechanical Department will provide necessary information to the Environmental Coordinator at least 15 days prior to start of job. The Environmental Coordinator will in turn advise the State.

DUP 1120158

DU 055184

cc: Sr. Supervisor Production
Sr. Supervisor Mechanical
Employee Relations Superintendent
Safety Supervisor

ATTACHMENT A

DATE:

TO: ENVIRONMENVAL COORDINATOR

FROM:_____SUPERVISOR, MECHANICAL

NOTIFICATION REQUIREMENT
POTENTIAL ASBESTOS EMISSIONS

BUILDING#_____ AREA_____

DESCRIPTION OF EQUIPMENT: (SIZE OF TANK, LENGTH AND SIZE OF PIPE, ETC.)

APPROXIMATE SIZE OF BUILDING WHERE LOCATED:

AGE OF EQUIPMENT:

EQUIPMENT USE:

WHY BEING REMOVED:

WORK TO COMMENCE:

WORK TO BE COMPLETED DATE: BY WHOM:

TOTAL AMOUNT OF ASBESTOS TO BE REMOVED (SQUARE FEET, LINEAL FEET, ETC.)

NOTE: SEE ENGINEERING STANDARD S-4-T WHICH LISTS REQUIREMENTS FOR PERSONNEL PROTECTION, DISMANTLEMENT, LABELING AND DISPOSAL.

DUP 1120159

DU 055185

cc: Sr. Supervisor
Plant Doctor

ATTACHMENT B

DATE:_____

TO:_____ W.R.#:_____
(Name)

_____ Soc. Sec.#:_____
(Area)

FROM: E. V. GREGSON

PERSONAL EXPOSURE MONITORING FOR ASBESTOS-EMPLOYEE NOTIFICATION

On_____a personal monitoring sample on your job assignment as a _____indicated that you were exposed to _____fibers longer than five microns per cubic centimeter of air of asbestos as an 8-hour time weighted average compared to a permissible limit of two fibers longer than five microns per cubic centimeter of air.

This exposure is above/below ther permissible limit.

The following corrective action is being taken:

_____

_____

_____

Note: If you have any questions relative to sampling procedure, results, exposure limits, resampling, or control measures, I can be reached on Ext. 118.

DUP 1120160

DU 055186

cc: J. F. Kane
J. E. Romano
J. E. Sylvanus
P. C. Santos
R. G. Little
D. M. Kafka
W. L. Kremer
F. M. Gorsuch

Edge Moor, Delaware
April 23, 1980

D. W. ROSSER
P. M. SEDOR
J. W. TURNER
E. C. HENZE
M. J. DUNBAR
J. P. HOLBACK
J. T. CAVANAUGH
J. B. TAYLOR, JR.
R. WALDIN
W. J. ZERBE
T. A. JENKINS
A. R. PALLADINETTI
C. S. STINSON, III
R. O. COPPOLA
J. F. LANE
J. J. SHEA
K. R. FARRARE
W. J. BULLEN, SR.
J. REGAN, JR.
J. A. TOPEKA
W. E. JOHNSON
A. J. FLEISCHUT
M. A. ZAREBICKI

F. R. HAMM
J. D. SHUKITT
T. R. BARTNETT
J. S. DIXON
D. R. ROBINSON
V. P. BEIRIGER
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W. D. WHITESELL
A. T. McGRATH
D. SELIGA
W. A. CHADWICK
H. G. SELHEIMER
J. SWIEDER
R. N. HITCH, JR.
R. D. GILLESPIE
R. O. JONES
C. T. MELVIN
E. N. BROWN
E. T. O'NEILL
W. G. KIRK
H. E. BORECKI, JR.

D. NGUYEN
M. G. BROWN
G. W. TAYLOR
K. L. UHLAND
R. D. O'BRIEN
J. L. WILLIAMS
F. W. SKINNER, JR.
G. F. SCHMIDT
P. C. SMITH
T. F. DAVID
R. W. HUEBNER, JR.
V. J. GUILFOY
D. G. WINNINGTON
R. L. McCATHERN
F. F. WHAM, JR.
S. W. WITKOWSKI, SR.
H. B. COULTER, JR.
M. J. KELLY, JR.
R. C. BURGE
K. A. BERKLEY
A. W. ROESKE
E. R. ROBERTS

ASBESTOS REMOVAL PROCEDURE

Attached for your use are a copy of the latest Asbestos Removal Procedure and an outline summary of the Procedure. Please destroy any other outdated copies you may have in your files.

As you know, asbestos dust is a proven respiratory hazard. Proper handling procedures must be followed to protect employees from exposure to airborne asbestos fibers.

N. LIBERMAN
AREA ENGINEER
SAFETY, HEALTH AND ENVIRONMENTAL

NL/ldw
Attachments

DUP 1120161

DU 055187

PROCEDURE
CONTROL OF ASBESTOS DUST

1. PURPOSE

Prescribe methods for controlling, measuring, and eliminating exposure to asbestos dust.

2. SCOPE

Applicable with airborne dust originating from asbestos and asbestos-impregnated materials.

3. SOURCE OF EXPOSURE

A. All thermal insulation installed prior to 1972 could contain asbestos fibers, including calcium silicate. This could be a source of high exposure during dismantling.

B. Other asbestos-bearing materials are possible sources of exposure in varying degrees, for example, heat suits and gloves, laboratory hot pads, transite board and pipe, asbestos board, listing tape, asbestos cloth, Haveg pipe and fittings, etc.

C. There are some asbestos-bearing materials used at Edge Moor in which the fibers are contained and are not a source of airborne dust, for example, braided and molded packing, fibrous adhesive, compressed asbestos gasket material, Garlock, etc. However, these items will be cataloged and emissions supported by air samples of the work area where they are used.

4. EXPOSURE LIMITS

A. Asbestos dust concentration limits are an 8-hour, time-weighted average (T.W.A.)** of two fibers, longer than five microns, per cubic centimeter of air* and;

B. A ceiling concentration of 10 fibers, longer than five microns, per cubic centimeter of air*.

C. Occupational exposure defined as: An 8-hour T.W.A. of more than 0.1 fibers, longer than five microns, per cubic centimeter of air*.

5. REGULATORY REQUIREMENTS

When asbestos-bearing materials to be removed during renovations exceed 260 lineal feet (80 meters) of pipe insulation or 160 square feed (15 square meters) of insulation on ducts, boilers, tanks or structural members, the E.P.A. must be notified regarding potential asbestos emissions. E.P.A. notification is required for all demolitions where asbestos-bearing materials are involved, regardless of the quantity.

**Average concentration occurring over a period of 8 hours.

*All determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter method at 400'450 x (magnification)(4 millimeter objective) with phase contrast illumination.

DUP 1120162

PROCEDURE - CONTROL OF ASBESTOS DUST (Cont.)

5. REGULATORY REQUIREMENTS (Cont.)

The responsibility for the actual notification or Letter of Intent rests with the Environmental Coordinator, J. S. Dixon. The information required for the Letter of Intent is covered in Attachment "A". The responsibility for gathering this information and notifying the Environmental Coordinator regarding the work to be performed rests with the Mechanical Supervisor that is responsibile for that area maintenance.

6. CONTROL OF ASBESTOS DUST

A. Exercise care when handling materials which are potential sources of asbestos dust. Local exhaust ventilation and similar controls shall be used to meet the exposure limits prescribed by Section 4, if possible. Prescribed safety equipment must be worn on all jobs where exposure to asbestos dust is possible.

B. When cutting asbestos-containing material, use tools that will not make a dust, e.g., shears, knives or other similar cutters. If asbestos-containing material is cut with a saw, the asbestos procedure must be followed.

C. Respirators (Section 7) and special clothing (Section 8-A) shall be worn by employees engaged in removal or demolition of asbestos insulation or covering.

D. Whenever material which contains asbestos is to be removed and discarded, it is to be thoroughly wetted down prior to and during removal*. Removal methods which may cause dust should not be employeed. The removal area shall be roped-off and proper signs posted (Section 6-G and Section 10-D).

E. During clean-up of asbestos materials, no dry sweeping shall be performed nor any air blowdown used. Use a vacuum cleaner or wet down before sweeping. If a vacuum cleaner is to be used, it shall be fitted with a filter which will contain asbestos fibers at the filter exhaust to meet the exposure limits prescribed in Section 4.

F. Asbestos waste shall be collected in damp or wetted condition and placed in a sealed, impermeable plastic bag (tool crib). The bag shall be identified with special warning label and transported to the designated asbestos disposal box. The coveralls and gloves are to be disposed of at the end of each day in the same manner as the asbestos waste.

G. The work area shall be roped-off (barricaded) and caution signs conforming to Engineering Standard S-4-T, 7.6 shall be posted at all approaches. Roped-off limits shall be placed at a sufficient distance to prevent bystander exposure and permit a person to read the signs and take necessary precautions before entering the area.

*Best results are achieved by removing the outer covering after the initial wetdown and rewetting the area to be worked on.

DUP 1120163

DU 055189

PROCEDURE - CONTROL OF ASBESTOS DUST (Cont.)

6. CONTROL OF ASBESTOS DUST (Cont.)

H. Chemical contaminated asbestos or asbestos-bearing materials require special considerations and should be handled by adequately trained personnel. It is the building custodian's (Operations) responsibility to determine who may perform the work.

7. RESPIRATORY EQUIPMENT

A. Respiratory protection shall be provided to all personnel in areas where the permissible exposure limits may be exceeded per Section 4-A.

B. Mechanical filter-type respirators are required when the T.W.A. or ceiling concentrations are not expected to exceed 10 times the limits stated in Section 4-A. (Norton 7170 available in stores).

C. Atmosphere-supplying, positive-pressure respirators are required when the 8-hour T.W.A. or 15-minute T.W.A. concentrations are expected to exceed 10 times the limit stated in Section 4-A or in areas where a complete wetdown is impossible, an airline mask or self-contained airpack mask is required. See Plant respirator program for guidelines on use and care of respiratory equipment.

D. Each employee who may use a respirator shall be instructed in its use and in testing it for proper fit. He shall test it for proper fit prior to each use.

8. HYGIENE

A. Special clothing ("Tyvek" coveralls with hood and foot coverings) shall be provided (available at the storeroom) for employees exposed to concentrations which may exceed the limits in Section 4 and during all removal, demolition or spraying operations. Plastic gloves are also available at the storeroom and must be worn when handling asbestos material.

B. Food, gum, tobacco, or other material which may be placed in the mouth shall not be kept or consumed in work areas where asbestos is being handled.

C. Annual medical examinations are required for employees who are or might be exposed to airborne concentrations of asbestos fibers greater than 0.1 fibers/cc (8-hour T.W.A.).

9. SAMPLING

A. It may be necessary to obtain material samples or air samples for reasons such as:

(1) Material Samples - An employee may be assigned to a job working with a material which may contain asbestos fibers. A material analysis must be made to ensure that proper protective measures are instituted prior to, during, and after the job, and/or,

PROCEDURE - CONTROL OF ASBESTOS DUST (Cont.)

9. SAMPLING (Cont.)

A. (Cont.)

(2) Air Samples - There is reason to suspect that employees may be exposed to airborne asbestos fibers because:

(a) They are working with an asbestos-bearing material and a personal sample is needed to determine exposure level.

(b) Because of the location and/or condition of asbestos-bearing materials, employees may be exposed to airborne fibers.

B. When the need for air samples is indicated (Section 9-A), contact N. Liberman, Ext. 118, give a description of the work requested and the location. Follow this with a formal written request (Don't Say It...).

C. Representative samples have indicated that the procedures followed by the Mechanical Department in the handling of asbestos-bearing materials have kept exposure well below the limits set by the Occupational Safety and Health Administration (O.S.H.A.). Continued sampling and air monitoring will be maintained throughout the department. The SHE Department will perform the monitoring, supply the equipment necessary, and provide a written report of the sampling results to the mechanical area supervision who requested the sampling. Each major dismantlement job should be monitored for airborne concentrations. All jobs should be considered for monitoring and jobs of two hours or greater duration should be monitored for airborne concentrations. The mechanical area responsible shall request monitoring and where employees are exposed to asbestos dust, request personnel monitoring to determine the employee's exposure. Sampling must be taken in a frequency pattern to represent accurately the employees exposure over his work period. Sampling shall include area and personnel monitoring.

Personnel Monitoring:

D. As soon as practical, but not later than five days after receipt of sampling results, the Senior Supervisor, Mechanical, or his designate shall notify in writing, (Attachment "C") any employee found to have been exposed to airborne concentrations in excess of the limits found in Section 4-A of this procedure. The notification form shall be filled-out in its entirety and copies distributed as indicated on the form.

10. RECORDS

A. Medical records of persons working in asbestos airborne environment are maintained by the Edge Moor Medical Section.

B. Environmental-Personnel Monitoring Records are maintained by the Safety, Health, and Environmental Department.

DUP 1120165

ASBESTOS PROCEDURE SUMMARY

I. EMPLOYEE PROTECTION

A. Rope-off and special sign

B. Wet down

C. Clothing - Tyvek suits, hoods, boots and plastic gloves.

D. Masks

1. Ceiling concentration not expected to exceed 10 times limits (Section 4A of Procedure), use Norton 7170 mechanical respirator (in stores).

2. Self-contained breathing apparatus must be used if exposure is expected to exceed 10 times limits (Section 4A of Procedure).

E. Monitoring/Sampling - If needed, contact SHE Department Liberman Ext. 118).

F. The following are not permitted:

1. Dry Sweeping
2. Air Blowing
3. Power cutting of asbestos-containing material.
4. Retention or consumption of food, gum tobacco, etc. in an area where asbestos material is being handled.

II. ENVIRONMENTAL PROTECTION

A. Renovations

1. Large - Over 80 meters (260 lineal feet) of pipe or over 15 square meters (160 square feet) of ducts notify J. S. Dixon. J. S. Dixon will notify EPA, unless of an emergency nature, a minimum of 20 days notice is required before work is to start.

2. Small - If material involved is less than 80 meters (260 lineal feet) of pipe or less than 15 square meters (160 square feed) of duct, no notice is required.

B. Demolitions

1. Large - If material involved is greater than 80 meters (260 lineal feet) of pipe or 15 square meters (160 square feet) of duct, the EPA (via J. S. Dixon) must be notified at least 10 days prior to start of demolition.

DUP 1120166

DU 055192

II. ENVIRONMENTAL PROTECTION (Cont.)

B. Demolitions (Cont.)

2. Small - Demolitions that involve less than both 80 meters (260 lineal feet) and 15 square meters (160 square feet) the EPA (via J. S. Dixon) must be notified at least 20 days prior to demolition.

III. DEFINITIONS

A. Renovations

Involves removing or stripping away asbestos from pipes, ducts, boilers, tank reactors, furnaces, or structural members.

B. Demolition

Involves removing or stripping away asbestos from pipes, ducts, boilers, tank reactors, furnaces, or structural members. If a load-supporting structural member is actual removed or wrecked, the operation is not a renovation, but a demolition.

DUP 1120167

DU 055193

SHE Superintendent

Date:

To: J. S. Dixon, Environmental Coordinator

From: _____ Supervisor, Mechanical

NOTIFICATION REQUIREMENT
POTENTIAL ASBESTOS EMISSIONS

Building #_____ Area _____

Description of equipment: (Size of tank, length and size of pipe, etc.)

Approximate size of building where located:

Age of equipment:

Equipment use:

Why being removed:

Work to commence:

Work to be completed date: By whom:

Total amount of asbestos to be removed (square feet, lineal feet, etc.)

(Note: See Engineering Standard S-4-T which lists requirements for personnel protection, dismantlement, labeling and disposal).

DUP 1120168

DU 055194

cc: J. F. Kane
J. E. Sylvanus
G. D. Lynsky, Jr.
J. P. Pritchard
M. J. Dunbar
W. J. Bullen, Sr.
N. Liberman
R. W. Felber
R. D. Gillespie
J. B. Romano
P. C. Santos
J. W. Turner
J. D. Shukitt
J. P. Holback
R. L. Ferris
W. J. Zerbe
R. K. Urian
J. T. Cavanaugh
J. D. Halberstadt
D. M. Kafka
E. C. Hentze
T. R. Bartnett
G. W. Taylor
D. G. Winnington
C. J. Murphy
R. W. Norris
J. J. Shea

Edge Moor, Delaware
June 21, 1979

J. B. Taylor, Jr.
J. A. Topeka
W. S. Wilson
J. L. Williams
V. J. Guilfoy
C. S. Stinson, III
C. T. Melvin
E. F. Lilly
T. A. Jenkins
J. M. Schuler
M. J. Kelly, Jr.
A. J. Fleischut, Jr.
H. E. Borecki, Jr.
J. P. Caruthers
L. W. Moyle
T. F. David
R. L. Boone
J. D. Graciano
E. W. Gregson
R. Waldin
J. F. Lane
T. W. Clegg, Jr.
R. N. Hitch
F. W. Skinner, Jr.
J. Swieder
R. L. Coppola
G. F. Schmidt
W. G. Kirk
J. Regan, Jr.
D. Seliga
A. W. Roeske
A. T. McGrath
G. E. Binder, Jr.
H. Rudinoff
S. W. Witkowski
K. R. Farrare
J. A. Wise
S. R. McLaughlin
A. R. Palladinetti
W. A. Chadwick
W. D. Whitesell
H. E. Selheimer
H. B. Coulter, Jr.
R. O. Jones
E. T. O'Neill
R. C. Burge
W. E. Johnson
R. W. Huebner, Jr.
K. A. Berkley
E. R. Roberts
R. L. McCathern
R. B. Gleason
P. C. Smith
M. A. Zarebicki
K. H. Creasey, Jr.
L. L. Hynson

From: F. F. Wham, Jr.

INSULATING COMMITTEE
ASBESTOS SEMINAR

The insulating committee will conduct an asbestos/ insulation seminar per the attached schedule.

Note: Participants who will not be able to attend as scheduled are excepted to send designated alternates.

DUP 1120169

DU 055195

ASBESTOS/INSULATION SEMINAR
PROGRAM

- Opening comments — J. T. Cavanaugh

- Introduction of the program — F. F. Wham, Jr.
  - Meaning of ASB and NA
  - Action to be taken if damaged asbestos is observed

- Sampling & labeling program — J. T. Cavanaugh
  Area reports
  - Finishing.....D. Winnington
  - Power.....J. Shea
  - Serv. & Gen. Areas.....W. Zerbe
  - R & D.....C. J. Murphy
  - RPO L-I.....W. Bullen
  - Wastewater.....R. Gillespie

- Safety and legal aspects of asbestos and asbestos-containing materials — N. Liberman

- Detailed review of asbestos removal procedure (revised 5/10/79). Each attendee will receive a copy of this procedure — J. T. Cavanaugh, F. F. Wham, Jr.

DUP 1120170

DU 055196

[illegible]

[illegible] room

[illegible] 1979

[illegible]	J. A. Topeka	W. S. Wilson
[illegible]	J. L. Williams	V. J. Guilfoy
[illegible]	C. T. Melvin	W. F. Lilly
[illegible]	J. M. Schuler	M. J. Kelly, Jr.
[illegible]	L. W. Moyle	R. L. Boone
[illegible]	E. V. Gregson	J. F. Lane
[illegible]	W. G. Kirk	H. E. Selheimer

[illegible] 24, 1979

[illegible]	R. Waldin	A. J. Fleischut
[illegible]	R. N. Hitch	F. W. Skinner, Jr.
[illegible]	R. L. Coppola	A. W. Roeske
[illegible]	G. E. Binder, Jr.	H. Rudinoff
[illegible]	K. R. Farrare	J. A. Wise
[illegible]	J. J. Shea	W. A. Chadwick
[illegible]	R. O. Jones	R. C. Burge

[illegible]esday July 31, 1979

[illegible]	W. D. Whitesell	E. T. O'Neill
[illegible]nson	R. W. Huebner,Jr.	K. A. Berkley
[illegible]erts	R. L. McCathern	R. B. Gleason
[illegible]th	M. A. Zarebicki	K. H. Creasey, Jr.
[illegible]nson		

DUP 1120171

DU 055197

PROCEDURE

CONTROL OF ASBESTOS DUST

1. PURPOSE

Prescribe methods for controlling, measuring, and eliminating exposure to asbestos dust.

2. SCOPE

Applicable with airborne-dust originating from asbestos and asbestos-impregnated materials.

3. SOURCE OF EXPOSURE

A. All thermal insulation installed prior to 1972 could contain asbestos fibers, including calcium silicate. This could be a source of high exposure during dismantling.

B. Other asbestos-bearing materials are possible sources of exposure in varying degrees, for example, heat suits and gloves, laboratory hot pads, transite board and pipe, asbestos board, listing tape, asbestos cloth, Haveg pipe and fittings, etc.

C. There are some asbestos-bearing materials used at Edge Moor in which the fibers are contained and are not a source of airborne dust, for example, braided and molded packing, fibrous adhesive, compressed asbestos gasket material, Garlock, etc. However, these items will be cataloged and emissions supported by air samples of the work area where they are used.

4. EXPOSURE LIMITS

A. Asbestos dust concentration limits are an 8 hour time weighted average (T.W.A.)* of 2 fibers, longer than 5 microns, per cubic centimeter of air and;

B. A 15 minute* T.W.A. of 10 fibers, longer than 5 microns, per cubic centimeter of air.

C. Occupational exposure defined is: an 8 hour T.W.A. of more than 0.1 fibers, longer than 5 microns, per cubic centimeter of air.

* Time Weighted Average

DUP 1120172

...ion occurring over a period of 8 hours.

DU 055198

5. REGULATORY REQUIREMENTS

When asbestos-bearing materials to be reroved during renovations exceed 260 lineal feet (80 meters) of pipe insulation or 160 square feet (15 square meters) of insulation on ducts, boilers, tanks or structural members, the E.P.A. must be notified regarding potential asbestos emissions. E.P.A. notification is required for all demolitions where asbestos-bearing materials are involved, regardless of the quantity.

The responsibility for the actual notification or Letter of Intent rests with the Environmental Coordinator, J. S. Dixon. The information required for the Letter of Intent is covered in Attachment "A". The responsibility for gathering this information and notifying the Environmental Coordinator regarding the work to be performed rests with the Mechanical Supervisor that is respons ble for that area maintenance.

6. CONTROL OF ASBESTOS DUST

A. Exercise care when handling materials which are potential sources of asbestos dust. Local exhaust ventilation and similar controls shall be used to meet the exposure limits prescribed by Section 4, if possible. Prescribed safety equipment must be worn on all jobs where exposure to asbestos dust is possible.

B. When cutting asbestos-containing material, use tools that wil not make a dust, e.g., shears, knives or other similar cutter If asbestos containing material is cut with a saw, the asbest procedure must be followed.

C. Respirators (Section 7) and special clothing (Section 8-A) shall be worn by employees engaged in removal or demolition of asbestos insulation or covering.

D. Whenever material which contains asbestos is to be removed and discarded, it is to be thoroughly wetted down prior to and during removal.* Removal methods which may cause dust should not be employed. The removal area shall be roped off and proper signs posted (Section 6-G and Section 10-D).

E. During cleanup of asbestos materials, no dry sweeping shall be performed nor any air blowdown used. Use a vacuum cleane or wet down before sweeping. If a vacuum cleaner is to be used, it shall be fitted with a filter which will contain as bestos fibers at the filter exhaust to meet the exposure limits prescribed in Section 4.

* Best results are achieved by removing the outer covering after the initial wetdown and rewetting the area to be worked on.

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CONTROL OF ASBESTOS DUST - Continued

Asbestos waste shall be collected in damp or wetted condition and placed in a sealed impermeable plastic bag (tool crib). The bag shall be identified with special warning label and transported to the nearest dumpster box. The coveralls and gloves are to be disposed of at the end of each day in the same manner as the asbestos waste.

The work area shall be roped off (barricaded) and caution signs conforming to Engineering Standard S-4-T, 7.6 shall be posted at all approaches. Roped off limits shall be placed at a sufficient distance to prevent bystander exposure (8 hr. T.W.A. of more than 0.1 fiber/cc longer than 5 microns) and will permit a person to read the signs and take necessary precautions before entering the area.

Chemical contaminated asbestos or asbestos-bearing materials require special considerations and should be handled by adequately trained personnel. It is the building custodian's (operations) responsibility to determine who may perform the work.

7. RESPIRATORY EQUIPMENT

A. Respiratory protection shall be provided to all personnel in areas where the permissible exposure limits may be exceeded per Section 4-A.

B. Mechanical filter-type respirators are required when the T.W.A. or ceiling concentrations are not expected to exceed 10 times the limits stated in Section 4-A. (Norton 7170 available in stores).

C. Atmosphere-supplying positive pressure regulators are required when the 8 hour T.W.A. or 15 minute T.W.A. concentrations are expected to exceed 10 times the limit stated in Section 4-A or in areas where a complete wetdown is impossible, an airline mask or self-contained airpack mask is required.

D. Each employee who may use a respirator shall be instructed in its use and in testing it for proper fit. He shall test it for proper fit prior to each use.

8. HYGIENE

A. Special clothing ("Tyvek" coveralls with hood and foot coverings) shall be provided (available at the storeroom) for employees exposed to concentrations which may exceed the limits in Section 4 and during all removal, demolition or spraying operations. Plastic gloves are also available at the storeroom and must be worn when handling asbestos material.

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DU 055200

8. HYGIENE Continued

B. Food, gum, tobacco, or other material which may be placed in the mouth shall not be kept or consumed in work areas where asbestos is being handled.

C. Annual medical examinations are required for employees who are or might be exposed to airborne concentrations of asbestos fibers greater than 0.1 fibers/cc (8 hour T.W.A.).

9. SAMPLING

A. It may be necessary to obtain material samples or air samples for reasons such as:

(1) Material Samples - an employee may be assigned to a job working with a material which may contain asbestos fibers. A material analysis must be made to ensure that proper protective measures are instituted prior to during, and after the job, and/or,

(2) Air Samples - there is reason to suspect that employees may be exposed to airborne asbestos fibers because:

(a) They are working with an asbestos-bearing material and a personal sample is needed to determine exposure level.

(b) Because of the location and/or condition of asbestos-bearing materials, employees may be exposed to air-borne fibers.

B. When the need for air samples is indicated (Section9-A), contact R. L. Ferris, Ext. 118, give a description of the work requested and the location. Follow this with a formal written request (Don't Say It...).

C. Representative samples have indicated that the procedures followed by the Mechanical Department in the handling of asbestos-bearing materials have kept exposure well below the limits set by the Occupational Safety and Health Administration (O.S.H.A.). Continued sampling and air monitoring will be maintained throughout the department. The SHE Department will perform the monitoring, supply the equipment necessary, and provide a written report of the sampling results to the mechanical area supervision who requested the sampling. Each major dismantlement job should be monitored for airborne concentrations. All jobs should be considered for monitoring and jobs of 2 hours or greater duration should be monitored for airborne concentrations. The mechanical area responsible shall request monitoring and where employees are exposed to asbestos dust, request personnel monitoring to determine the employee's exposure. Sampling must be taken in frequency pattern to represent accurately the employees exposure over his work period.

DUP 1120175

PROCEDURE

CONTROL OF ASBESTOS DUST

9.1 Continued

Personnel Monitoring:

c. As soon as practical, but not later than 5 days after receipt of sampling results, the Senior Supervisor, Mechanical, or his designate shall notify in writing, (Attachment "B") any employee found to have been exposed to airborne concentrations in excess of the limits found in Section 4-A of this procedure. The notification form shall be filled out in its entirety and copies distributed as indicated on the form.

11. RECORDS

A. Medical records of persons working in asbestos airborne environment are maintained by the Edge Moor Medical Section.

B. Environmental-personnel monitoring records are maintained by the Safety, Health, and Environmental Department.

12. ELIMINATION OF ASBESTOS IMPREGNATED MATERIALS

A. All mechanical personnel shall continue to seek asbestos-free substitutes for asbestos containing materials.

13. REFERENCES

A. This M.D.P. is based on:

(1) DuPont Engineering Standard S-4-T
(2) O.S.H.A. Regulations, Section 1910:1001
(3) National Emissions Standard for Asbestos (40 CFR 61.20-61.25); and
(4) O.S.H.A. Program Directive #300-16.

DUP 1120176

DU 055202

Sr.Supervisor Mechanical
SHE Superintendent

Attachment A

Date:

To: J. S. Dixon, Environmental Coordinator

From: _____ Supervisor, Mechanical

NOTIFICATION REQUIREMENT
POTENTIAL ASBESTOS EMISSIONS

Building #_____ Area _____

Description of equipment: (Size of tank, length and size of pipe, etc

Approximate size of building where located:

Age of equipment:

Equipment use:

Why being removed:

Work to commence:

Work to be completed date: By whom:

Total amount of asbestos to be removed (square feet, lineal feet, et

(Note: See Engineering Standard S-4-T which lists requirements for personnel protection, dismantlement, labeling and disposal).

DUP 1120177

DU 055203

ATTACHMENT B

DATE: _____

TO: _____ W.R.# _____
(Name)

Soc.
_____ Sec.# _____
(Area)

FROM: H. Liberman

PERSONAL EXPOSURE MONITORING-EMPLOYEE NOTIFICATION

On _____ a personal monitoring sample on your job assignment as a _____ indicated that you were exposed to _____ micrograms per cubic meter (MG/M3)/parts per million (ppm) of _____ as an 8 hour time weighted average compared to a permissible limit of _____.

This exposure is above/below the permissible limit.

The following corrective action is being taken:

_____

_____

_____

Note: If you have any questions relative to sampling procedure, results, exposure limits, re-sampling, or control measures, I can be contacted on Ext. 183 or at the Safety Office.

DUP 1120178

DU 055204