PLAINTIFF'S
EXHIBIT
DUP-670

302-02

"SAFETY HOW" MANUAL

Repauno Plant
E. I. du Pont de Nemours & Company, Inc.
Gibbstown, New Jersey

TO: ALL REPAUNO EMPLOYEES

This is your "Safety How". Properly applying this information and using common sense will result in a safer plant.

"Safety How" is widely distributed so that it will be readily available. We urge you to use it frequently. It sets forth minimum safety requirements and is supplemented by area rules and procedures, Engineering Department Standards, and our Safety Section. All can be consulted for clarification or interpretation.

Revisions will be sent to the person to whom this manual is assigned (previous page). Read the revision, cover it with area personnel and insert it immediately so your "Safety How" will be current. Notify your supervisor or the Safety Section of any changes in assignment or of proposed changes in "Safety How".

All Repauno employees should be familiar with the information in "Safety How". If you have any doubt about the safe way to do a job, STOP! Think the job through and consult your supervision before proceeding. Only in this way can we plan and perform our jobs safely.

Ralph Bauer
Plant Manager

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SAFETY ORGANIZATION AND ADMINISTRATION

The Du Pont Company's safety philosophy was aptly put by Mr. Walter S. Carpenter, Jr., when he was Chairman of the Board.

"We in the Du Pont Company long ago concluded that the safety of employees is of the greatest interest to management, ranking in importance with production, quality of product, and costs. We have found that maintenance of safe operating procedures in our plants is of benefit far beyond any resulting dollar savings, the human values involved being of greater importance to both employer and community. Also, the acceptance and practice of fundamental safety principles by management and men, with the reduction of personal injuries to a minimum, inject an element of team play which does much to foster a spirit of friendly cooperation throughout our Company."

Du Pont Safety Philosophy

The success of the Company's safety effort depends upon a thorough understanding and acceptance of the principles upon which this effort is based:

1. ALL INJURIES CAN BE PREVENTED. The key word here is "ALL". This is a realistic goal and not just a theoretical objective! A supervisor with the responsibility for the well-being of employees cannot be effective without fully accepting this principle.
2. MANAGEMENT, WHICH INCLUDES ALL LEVELS THROUGH THE FOREMAN, HAS THE RESPONSIBILITY OF PREVENTING PERSONAL INJURIES. Since line organization has the responsibility for every operational activity of the Company, *each supervisor must accept his share of the responsibility for the safety of the employees.*
3. IT IS REASONABLY POSSIBLE TO SAFEGUARD ALL OPERATING EXPOSURES WHICH MAY RESULT IN INJURIES. It is preferable, of course, to eliminate the sources of danger. However, where this is not reasonable or practical, supervision must resort to such measures as the use of guards, safety devices, and protective clothing. *No matter what the exposure, an effective safeguard can be provided.*
4. IT IS NECESSARY TO TRAIN ALL EMPLOYEES TO WORK SAFELY AND TO UNDERSTAND THAT IT IS TO THEIR ADVANTAGE, AS WELL AS THE COMPANY'S, TO WORK SAFELY AND THAT THEY HAVE A DEFINITE RESPONSIBILITY TO DO SO. Adequate training of the employee is a responsibility of supervision. Each individual, however, must be convinced that he has a responsibility for working safely and that to do so not only benefits the Company but indeed is a very real *personal benefit.*
5. IT IS GOOD BUSINESS FROM THE STANDPOINT OF BOTH EFFICIENCY AND ECONOMY TO PREVENT PERSONAL INJURIES ON THE JOB AND OFF THE JOB. In addition to the humanitarian aspects, *injuries cost money and reduce efficiency.*

Safety Responsibilities

Safety, an integral part of every job, is a line organization responsibility. To whatever extent each individual is responsible for operations, to that same extent he is responsible also for the safety of such operations. The manager is responsible for the safety of all plant employees. When a foreman, a supervisor, or a superintendent is given the job of running an operation, responsibility for the safety of the employees working in that operation goes with it. Finally, the individual employee in accepting his job assumes the responsibility for working safely. When these divisions of responsibility for plant personnel are systematically united for safety as they are united for operations, the result is a safe working organization identical with the operating organization.

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REPAUNO PLANT SAFETY ORGANIZATION

Overall Plant responsibilities for all employees fall in the following general areas:

Safety
Production
Employee Relations
Quality - Products and Services
Cost Control
Technical Efforts
Environmental Control
Energy

Each of these responsibilities deserves equal attention from each member of supervision. All are line responsibilities for every shift worked. Standards of good performance differ from one responsibility to another and from one circumstance to another except that safety standards of performance are paramount! Unsafe acts, poor safety attitudes, or unsafe conditions will not be tolerated at Repauno.

Plant Management can outline safety policy and monitor performance but the administration and execution of a loss control/ accident prevention program is the responsibility of departmental supervision and each employee, on every shift.

Committees and subcommittees have been established at Repauno to supplement and assist the line organization in fulfilling their safety responsibilities. These committees are:

A. POLICY COMMITTEE

Meets monthly on the fourth Monday at 10:30 a.m.

Plant Manager - Chairman
Assistant Plant Manager - Vice Chairman
Production Superintendent
Mechanical Superintendent
Control Superintendent
Employee Relations Superintendent
R&D Superintendent
Senior Supervisor - Safety - Secretary

Formulates, guides, and coordinates general safety and occupational health policies and practices. Coordinates Plant safety and health programs and subcommittee activities.

1. Standing Committees

The following committees are all subcommittees of the Policy Committee. Department Superintendents serve as chairmen or sponsors of these committees and are expected to report on activities monthly at Policy Committee meetings. The Senior Supervisor - Safety & Fire and/or the Safety Supervisor will serve as an advisor to each committee.

- Safety Activities Committee

Meets monthly. Investigates and recommends activities and programs to maintain and stimulate interest in safety, usually on a Plant-wide basis. Execution of authorized activities and programs will be the responsibility of this committee. Safety activities at the departmental level will be the responsibility of the departments or sections.

Subcommittees for On-Job Safety, Off-Job Safety, Special Activities, Publicity, STOP, etc, may be formed at the Chairman's discretion but must be chaired by a member of the Committee.

- Process Hazards Review Coordinating Committee

Meets at the Chairman's call. Membership includes the Senior Supervisor - Safety & Fire as Secretary/Advisor, and the Mechanical, R&D, and Production Superintendents as members.

This Committee assigns personnel to specific process hazard reviews; defines the review scope, timing, and objectives; coordinates and monitors all process hazard review activities; and arranges for any consultation or training necessary.

The individual Process Hazard Review Committees utilize systematic analysis techniques to assure that there are no inadequately controlled or unrecognized hazards in any Repauno process which may cause severe injury or a large property loss. These committees are appointed by the Process Hazards Review Coordinating Committee and serves for the duration of the review.

- Standards Committee

Meets twice monthly. Reviews, revises where necessary, and adds Plant-wide safety rules, regulations, and procedures.

- Industrial Hygiene Committee

Meets monthly. Coordinates, guides, directs, and monitors activities to identify, evaluate, and control industrial hygiene, occupational health, and chemical hazards.

- Hazardous Materials Transportation Safety Committee

Meets monthly. Coordinates, guides, directs, and monitors activities to identify, evaluate, and control hazardous materials distribution.

B. DEPARTMENTAL SAFETY COMMITTEES

Safety and occupational health are line responsibilities, however Departmental Safety Committees can frequently assist the line organization and provide opportunities for safety effort involvement at all levels. Departmental Safety Committees also permit the department to adopt safety publicity, suggestions, activities, and materials to its specific needs. These Committees also may serve well in an accident prevention effort by conducting departmental audits and inspections.

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1979 SAFETY COMMITTEE ORGANIZATION

POLICY COMMITTEE

R. W. Bayrer, Chairman
O. L. Brannen, Vice Chairman
J. E. Davis
T. R. Stimaleon
J. E. Miller
R. M. Reardon
A. B. Palmer
J. H. Strauss, Secretary

SAFETY-STANDARDS

R. M. Reardon, Chairman
G. F. Neiman
J. G. Schoppy
A. C. Mattson
R. Mc Call
L. A. Targonski
L. R. Dombrowski
J. H. Strauss, Advisor

HAZARDOUS MATERIALS TRANSPORTATION SAFETY

J. E. Davis, Chairman
V. F. Kasey
D. F. Garrison
F. J. Michels
R. G. Johnson
F. T. Smith
W. Ordille, Advisor

INDUSTRIAL HYGIENE COMMITTEE

A. B. Palmer, Chairman
J. McKay
H. Targe
S. O. Rogers
A. Smulkstys, M.D.
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PROCESS HAZARDS REVIEW COORDINATING COMMITTEE

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1979 SAFETY COMMITTEE ORGANIZATION

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J. W. Whitelam
A. F. Gillespie
W. L. McKenica
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ON-THE-JOB SAFETY SUBCOMMITTEE

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Production Safety Proctor

STOP SUBCOMMITTEE

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DU 063218

INJURY CLASSIFICATION, INVESTIGATION, AND REPORTING

1. OBJECTIVES

- Determine reasons for occurrence.
- Determine long- and short-range action to prevent recurrence.
- Share experiences and "lessons learned" with others.
- Determine preventive measure applicability to other areas.
- Assess a "Potential" to each event so that appropriate attention is devoted to the investigation.

2. CLASSIFICATION DEFINITIONS

A. Repauno injury classifications include:

- Lost Workday Case
- Restricted Workday Case
- Medical Treatment Case
- First-Aid Case
- Off-the-Job

B. Lost Workday Case

- An injury resulting in death.
- An injury resulting in one or more days away from work.

C. Restricted Workday Case

- An injury which essentially prevents an employee from performing his job on his next scheduled shift.

D. Medical Treatment Case

- Injuries which do not restrict job performance but usually require several medical treatment visits.

E. First-Aid Case

- All lesser on-the-job injuries, usually requiring only one treatment. Follow-up observations are normally permitted.

F. Off-the-Job

- Injuries not occurring in the course of employment which cause the employee to lose time from work, or the inability to work on one or more scheduled days of rest (weekend, vacation, etc).

G. Non-Tabulatable Injuries (Non-Tab)

- Serious injuries and diseases or other serious physical impairments not caused by or due to conditions of employment, when claimed or alleged but not accepted by the Company to have actually occurred in connection with employment.

- Serious injuries to non-Company employees or persons while on Company plants and properties.

- Delinquent, unsubstantiated injuries.

3. ASSISTANCE

A. Du Pont Safety and Fire Protection Guideline 11.1 serves as the standard classification reference guide. A current copy is available in Safety Section files.

B. All classifications and log entries required by the Occupational Safety and Health Act will be done by the Safety Section.

C. The Safety Section will classify all serious injuries; however, on questionable cases a classification meeting should be held (attendees should include the Plant Manager and/or Assistant Manager, ERD Superintendent, the injured's Department Superintendent, and a Safety Section representative).

D. Also available is a Corporate Classification Committee. Arrangements can be made through Departmental Management and the Safety and Fire Protection Division for their assistance.

4. INJURY INVESTIGATIONS

A. Lost and Restricted Workday Injuries

- A preliminary investigation must be conducted within 24 hours of the injury by immediate supervision and findings communicated to the Safety Section.

D. Non-Tab Injuries

- These injuries must also be investigated by area supervision and findings forwarded to the Safety Section.
- Improvement and Future Action Recommendations need not be included.
- If the injury involved someone not employed by Repauno, the investigation should include pictures, if possible, Repauno involvement, witness statements, etc. Again, recommendations should not be included.

5. INJURY REPORTING

A. Injury Notice - EX-2911

- Initiated by the Hospital for all injuries.
- The yellow copy is given to the injured who delivers to his Supervisor.
- The white copy is sent to the Department Superintendent.
- The blue and pink copies are sent to the Safety Section
  - Blue Copy - Safety Files
  - Pink Copy - Sent to Data Processing for Tabulatable LWC, RWC, MTC, and Off-Job.
- All Tabulatable On-the-Job injuries will be numbered consecutively each year, e.g., 77-1, 77-2 ... 77-N; 78-1, 78-2 ... 78-N.

B. LWC and RWC

- Forms for these injuries and kept in the Safety Section.

C. MTC/FAC Injury Report - Form G-113

- Form G-113 will be initiated by Plant Medical for all MTC and FAC injuries.
- Plant Medical completes the initial details on the G-113.
- The original is sent to the employee's Department who investigates to the extent warranted by the injury's potential and/or severity. The Department completes the G-113 and forwards to the Safety Section.

- A copy of the G-113 sent to the Department is sent by Plant Medical to the Safety Section.

- The Safety Section will retain the completed G-113.

D. Off-the-Job

- After an Off-the-Job injury occurs, the Safety Section will send the appropriate investigation and reporting forms to the Department involved.

6. PUBLICITY/COMMUNICATIONS

A. Daily Communique

- All Lost Workday, Restricted Workday, Medical Treatment, and Off-the-Job injuries will be reported in the Daily Communique as promptly as possible, even though an investigation has not been conducted.

- The injured's Senior Supervision should prepare a brief statement and phone this to the Safety Section, who will submit for the Communique. The information should include: Date, Time, Department, area where occurred, injury description (brief), how the injury occurred (one-two sentences).

B. Serious Injury Reports

- The Safety Section will coordinate issuing SI "red-border" reports, as mentioned under Section 4, with the involved Department's cooperation.

C. SPI

- Any On-the-Job injury with serious potential should be handled as an SPI.

D. Other

- Other publicity/communication tools are available, e.g., weekly Staff notes and special bulletins, and may be used. Contact the Safety Section if additional emphasis is desired.

7. REFERENCES

Injury Classification Guidelines, Question and Answer booklets, forms, records, etc, are available for reference in the Safety Section.

RESPIRATORY PROTECTIVE EQUIPMENT

GENERAL

There are two categories of respiratory protective equipment available for general use at Repauno:

1. Self-Contained Breathing Apparatus, used in toxic or oxygen-deficient atmospheres.

2. Breathing Air Masks, used for protection against nuisance concentrations of toxic fumes.

The Service Section is responsible for maintaining Self-Contained Breathing Apparatus and for operating and maintaining Breathing Air Masks.

Rules for the use of each type mask are posted at each mask location. Be familiar with and know how to operate the type of unit provided for your own particular job or job location. In addition, follow the rules listed below for the particular type of unit involved:

Self-Containing Breathing Apparatus

1. The Air Pak wall mounted unit is a 30-minute unit and is to be used for reserve and as an escape mask. (Air Pak in box at the Hospital is a 15-minute unit and is used as an escape mask only.)

2. Whenever an Air Pak is used the Service Section must be notified at Extension 303.

3. Whenever rescue work is necessary, consideration should be given to additional protective equipment needed for protecting the body against hazardous chemicals.

Breathing Air Masks

1. Breathing Air Masks are used primarily for tank entry (See Section 5-C-2).

2. Breathing air shall be supplied from a self-contained breathing apparatus consisting of certified breathing air cylinders, low pressure alarm, pressure reducing regulators, air hose, flow demand regulator, and face mask, mounted on a portable trailer. The trailer shall be painted green and the words "Breathing Air Unit" shall be stenciled on the trailer in white.

Breathing Air Masks (Continued)

3. Qualified Service Section personnel shall provide, set up, and test breathing air whenever Breathing Air Masks are to be used by area personnel.

4. The air cylinder valve for the air mask must be tagged with a "Danger" tag in the open position by the Service Section representative involved. (Each employee entering a vessel that requires an air mask in use, must place his block-out device and red "Do Not Operate" tag on the cylinder valve.) Green block-out is not to be used.

5. When the warning alarm sounds on low air pressure, the Service Section standby shall notify each mask user who must remove his red tag from the cylinder valve to permit the Service Section representative to switch cylinders. Step 4, above, applies when work is resumed.

Breathing Air Cylinders - Sampling

1. All breathing air cylinders must be sampled before being put into service with a Fyrite O_2 ensure that cylinders contain 21% oxygen.

ASBESTOS DUST EXPOSURE

General

Breathing high concentrations of asbestos dust is hazardous to health. Since June, 1973, all thermal insulation purchased has been asbestos-free. However, a number of old pipelines, tanks, and vessels are insulated with materials containing asbestos. Certain precautions must be taken when removing old insulation to protect personnel from excessive dust. These precautions are as follows:

- Wear approved MSA "Comfo II" respirators, with Model F, S, or H cartridges.
- Wet down insulation.
- Cut insulation with a knife - not a saw.
- Dispose of all waste, scrap, empty bags, and vacuum system collections in a sealed, impermeable plastic bag or container. "Caution" tags must be attached indicating contents.
- Brush off loose dust from clothing.
- Wash hands, arms, and face before eating to prevent inhalation of surface dust.
- No dry sweeping is to be performed. Vacuum cleaning is recommended.

EXCERPTS FOR REPAUNO MECHANICAL DEPT. SAFETY GUIDE

SECTION I - INTRODUCTION

I-A - Purpose of Book

The best insurance against accidents and injuries may be summed up in three short sentences:

1. Know your job.
2. Keep your mind on your work.
3. Use common sense.

This guide of safety rules, safety practices, and general information is designed to assist you in learning the safety requirements at Repauno Plant and thus to "know your job" better. If you, and every other employee, understand the information contained herein and apply it in your daily work, we will be far toward our goal of no accidents and no injuries at Repauno Plant.

Throughout this book reference is made to certain safety requirements designated as safety rules. These are requirements which must be complied with, and failure to do so is considered as an infraction of safety rules and is subject to disciplinary action. Section II of this book lists specific safety rules. Safety rules are also repeated elsewhere in this book in Section III as part of the general information pertinent to the M&C group. When they are repeated in any location other than Section II, they will be designated by the heading "Safety Rule".

I-B - Repauno Plant Safety Policy Is:

We can and will operate Repauno without hurting people. Line organization is charged with the responsibility of achieving this objective. This responsibility is to be assumed to the same degree that we assume responsibility for production, quality, cost, and human relations. See "Safety How" introduction.

I-C - Your Company's Attitude on Safety

Safe working conditions and the education and encouragement of employees in observing safety precautions has always been an integral part of our Company's policy.

The Company's effort in the prevention of accidents and injuries is reflected in a continuous safety program in which every employee plays an important part. Your part in this program is to make safety a part of your job so that the safety program of the Company will be successful.

You are encouraged to report to your foreman or supervisor any hazards or unsafe practices you may observe. Your cooperation and assistance is very essential to the success of the Repauno Plant safety program.

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If you are ever in doubt as to the proper and safe way to do your job, always ask your foreman or supervisor how the job should be done. Each and every employee of the Company exercises a personal responsibility for their own safety and for the safety of their fellow employees. A high degree of safety awareness is essential to all work within the Company. This same safety awareness is an essential ingredient in your well-being in any endeavor on or off the Repauno Plant. Injuries are never an asset to any accounting of your daily work. Continual consideration for safety is an asset which results in successful accomplishments.

DUP 1200704

DU 063227

THIS SHEET IS CURRENTLY BEING REVISED 7/25/80 JMA

III-D-40-2 (Safety Rule) Place "bull's-eye" block-out on rail when working on or obstructing the track. "Bull's-eye" must be placed 100 ft on either side of obstruction on a main track. "Bull's-eye" must be promptly removed when the work is completed (II-D-30).

III-D-41 Insulation

III-D-41-1 Keep hands clear of cutting bar of paper shear at all times and keep handle locked down when not in use.

III-D-41-2 Keep all sheet metal and wire rolled tightly and tied. Store with sharp edges away from aisleways or working areas.

III-D-41-3 Install all aluminum jacketing with cut edges bent over to present a smooth outside surface.

III-D-41-4 Do not use cotton cloth, canvas, or cotton-reinforced asbestos in nitric acid, ammonium nitrate, or sodium nitrite exposure.

III-D-41-5 Asbestos Dust Exposure - "Safety How" Section XII-2

Breathing high concentrations of asbestos dust is hazardous to health. Since June, 1973, all thermal insulation purchased has been asbestos-free. However, a number of old pipe lines, tanks, and vessels are insulated with materials containing asbestos. Certain precautions must be taken when removing old insulation to protect personnel from excessive dust. These precautions are as follows:

a. Wear approved MSA "Dust Foe" No. 66 respirators.
b. Wet down insulation.
c. Cut insulation with a knife - not a saw.
d. Dispose of all waste, scrap, empty bags, and vacuum system collections in a sealed, impermeable plastic bag or container. "Caution" tags must be attached indicating contents.
e. Brush off loose dust from clothing.
f. Wash hands, arms, and face before eating to prevent inhalation of surface dust.
g. No dry sweeping is to be performed. Vacuum cleaning is recommended.

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SECTION II - SAFETY RULES

Preamble:

The Management requests the cooperation of its employees in its efforts to make every employee familiar with Plant safety and operating rules, in order that accidents may be prevented and effective performance promoted and maintained.

In the interest of this common cause, the Management has obligated itself to enforce strictly and fairly the rules and regulations listed below, applying disciplinary measures where necessary to assure compliance.

To minimize the likelihood of any employee becoming subject to such disciplinary action, through ignorance or otherwise, the Management restates herewith the following Plant rules and regulations which will continue to govern employment on this Plant.

II-A-1 - Plant General Safety Rules - "Safety How", Section II

II-A-1-1 Work Performance

Working safely is a condition of employment with the Company, and each employee must comply with the Company's safety program.

II-A-1-2 Departmental Safety Rules

Know and follow your Departmental Safety Rules. Knowledge of these specific regulations is mandatory for safe conduct in your assigned area. The rules are posted for your information and protection, and they supplement the following general rules.

II-A-1-3 Reporting Injuries

First aid and medical attention must be obtained for all injuries, no matter how slight. Persons exposed to fumes or chemical contact must promptly report to the Hospital for observation or treatment.

II-A-1-4 Housekeeping

Good housekeeping is one of the first requirements of good safety. Each employee must keep his work location clean and orderly.

II-A-1-5 Smoking

Smoking is permitted only in designated places, at which places matches and lighters are provided.

DUP 1200706

DU 063229

Matches or lighters are NOT to be carried about on the person. They may be left in automobiles.

II-A-1-6 Fire Procedures

Know the location of and how to operate fire protection equipment. In case of a fire, report it with the least possible delay. Know the specific rules restricting the fighting of fires in your area. Do not go to the scene of a fire unless you have direct responsibility there. Do not block access to fire emergency equipment.

II-A-1-7 Emergency Equipment

Know the location of and how to use emergency equipment such as fire blankets, safety showers, stretchers, and gas masks. Do not block access to any emergency equipment.

II-A-1-8 Operating Equipment

Unauthorized operating or tampering with equipment is prohibited.

II-A-1-9 Blocking Out Equipment

Before repairs are made to any equipment, the equipment must be blocked out and prepared as specified in the "Blocking Out Equipment" procedure in "Safety How". "Danger" tags have the status of locks when placed on switches, valves, and controls that are not to be operated. Unauthorized removal, disregard, or misuse of such tags is a serious offense.

II-A-1-10 Vessel Entry

Do not enter any vessel or pit without the approval of supervision. Special regulations governing such work must be followed in accordance with "Safety How".

II-A-1-11 Horseplay

Horseplay is prohibited on the Plant.

II-A-1-12 Intoxicants and Narcotics

Intoxicants and narcotics or persons under the influence of intoxicants or narcotics are prohibited on the Plant.

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II-A-1-13 Firearms

Firearms are not permitted on the Plant.

II-A-1-14 Safety Equipment

Personal protective equipment is provided to safeguard employees in performing their duties. Employees must wear protective equipment in accordance with area safety rules.

In general, safety glasses and hard hats are the minimum protective equipment required in most areas.

II-A-1-15 Compressed Air

Do not use compressed air to clean clothing or any part of the body.

II-A-1-16 Traveling on the Plant

Obey the Plant traffic regulations. The speed limit on the Plant is 25 miles per hour except as posted otherwise.

II-A-1-17 Safety Hazards

Report any unsafe situation to your supervision immediately.

II-A-2 - Supplemental Rules - "Safety How", Section II

II-A-2-1 Electrical Switch Identification

Any electric switch which controls any motor driven equipment, instrumentation, or control circuit must be identified as to what it controls.

II-A-2-2 Eye Protection - Pressure Hose

When using an air hose or steam hose, proper eye protection must be worn.

II-A-2-3 Container Identification

All containers holding a liquid shall be identified as to its contents.

II-A-2-4 Refrigerators

Refrigerators provided for the storing of food or beverages shall be restricted for this purpose.

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II-A-2-5 Chemical Glassware

The use of chemical glassware is prohibited for foods or beverages.

II-A-2-6 Life Belts for Barges

All employees boarding barges will be required to wear life jackets. Each man should inspect the life jacket to make sure it is in good condition before putting it on.

II-A-2-7 Tank Car Platforms

Employees working on top of railroad tank cars shall be required to place a bar over the opening of the tank car guard rails.

II-A-2-8 Extension Cords - Hazardous Locations

Extension cords in hazardous locations must be equipped with "Ark-Tite" explosion-proof receptacles. In order to use a three-pronged crowfoot type receptacle in hazardous locations, the crowfoot receptacle must be taped solidly together, tagged with a "Caution" tag, and all connections made and broken with an "Ark-Tite" explosion-proof receptacle.

II-A-2-9 Valves on Tanks

All tanks containing flammable, corrosive or harmful materials shall be equipped with a shut-off valve as close to the tank nozzle as possible on all nozzles used to load or unload the tank from the bottom. See Engineering Standards F4G and F5G.

II-A-2-10 Safety Color Coding

Safety color coding shall be followed using Engineering Standards S3G as a guide.

II-A-2-11 Matches in Rags

All bales of rags opened in the main storeroom will be inspected carefully before they are placed in the storage bins.

All bales or bags of rags opened in operating areas shall be carefully inspected by the area before use.

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II-A-2-12 V-Belts

All V-belts used on Repauno shall be conductive-type belts.

II-A-2-13 Building Roofs

No personnel are allowed to walk on any Corrulux, Resolite, Transite, Robertson Protective Metal, Corrugated Aluminum, or Corrugated Steel roofs unless safety precautions are taken as follows:

a. Chicken walk shall be used with the plank extending over at least two roof supports. Planks used on an incline shall be cleated.
b. All planks shall be fastened securely.
c. Safety belts shall be worn.

II-A-2-14 Electrical Heating and Tracing

The approval of the Mechanical Superintendent is required for the use of electrical heating and tracing. See Engineering Standard D7K for installation.

II-A-2-15 Tank Top Work

In cases where frequent access to nozzle, instrument or other devices on top of a horizontal tank is required, an approved access and walkway should be provided. The roofs of vertical tanks are considered to be unsafe to walk on unless planks, chicken walks or some other acceptable means of spreading weight is provided. Walking or climbing on top of unguarded tanks requires the same protective measures as climbing on pipe, etc.

II-A-2-17 Friction Type Lighters

Friction type lighters, such as "Shoot-A-Lite" or similar lighters, may be carried within the Plant by employees who use them in the performance of their jobs. The procedures of Section IX, Pages 4 through 9, will apply.

II-A-2-18 Overhead Work

When work is to be performed in an area where a possibility exists that other employees may be working under the same location, every effort should be made to warn such employees of the overhead work. Precautions should be taken to prevent

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objects from falling. Wherever practical, maximum use should be made of the following: (1) Roping off the area and tagging with "Caution" tags; (2) "Overhead Work" warning signs; (3) Placing materials in tote boxes; and (4) Spreading canvas over grating to prevent objects from falling.

II-A-2-19 Seat Belts

a. Du Pont-Owned or Leased Motor Vehicles

All Du Pont-owned or leased motor vehicles licensed to travel off the Plant must be equipped with two safety belts in the front seat and two in the rear seat, if the vehicle design permits. The driver and occupants of vehicles must keep belts, where provided, fastened at all times while the vehicle is being driven off the Plant. The driver and occupants of Company sedans must keep seat belts, when furnished, fastened on and off the Plant.

II-A-2-20 Waste Oil and Solvents Disposal

To minimize pollution problems and fire hazards which may result from disposal of waste oils and solvents, the following procedure will be followed:

All waste oil and solvents shall be transported to the main fuel oil pump house for burning or other disposal as required. These materials should be collected in a drum with a tag attached showing the contents. Call the Transportation Field Office (phone 435) to move the drum to the oil pump house and notify the Power House (phone 220) when it is moved.

II-A-2-21 Unattended Vehicles - Engine Running

Motor vehicles will not be left unattended with the engine running, unless prior approval has been obtained from departmental supervision.

II-A-2-22 Radiation Gauges

a. Refer to "Safety How", Section XV-K-1, for general rules.
b. Unnecessary exposure of personnel should be avoided in the area of the source holder for any extended period of time.
c. The source holder must be blocked out and tagged.

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d. Any extensive work within one (1) foot of the source holder must have the approval of the Plant Radiation Protection Officer or his alternate.
e. In the event of an emergency, such as a fire or explosion, which involves the source holder, notify Radiation Protection.

II-A-3 - General Safety Rules

II-A-3-1 Fighting

Fighting or attempting bodily injury to another employee is prohibited on the Plant. Fighting is construed to imply the striking of any blow, even though in defense. First offense - Discharge.

II-A-3-2 Stealing

Stealing or malicious conduct, including destroying or damaging Company or other employee's property, is subject to severe penalty on review by Management.

II-A-3-3 Intoxicants

Intoxicants in any form are not permitted in the Plant. Persons reporting for work in an intoxicated condition will be sent home and make themselves liable to supervisory review and penalty.

II-A-3-4 Clothing

Ragged and badly worn clothing must not be worn. Wear proper clothing for comfort, health, and safety at all times when on the Plant.

II-A-3-5 Injuries

All injuries, no matter how slight, such as foreign bodies in the eye, scratches, etc, must be reported to the foreman immediately. In the event the foreman is not available, proceed to the Plant Hospital and report to the foreman immediately after treatment.

II-A-3-6 Goggles must be worn for all gas welding and face shield for arc welding.

II-A-3-7 Specially designed chipping goggles or face shield must be worn on jobs involving concrete cutting, or other operations where safety spectacles do not provide adequate protection against flying particles.

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II-A-3-8 Safety Belts

Safety belts are to be worn when working above the ground on pipe bridges, pipe lines, tanks, columns, towers, steel structures, etc, when adequate platforms or scaffolds are not provided. The use of safety belts as indicated in "Safety How" must be carefully followed (Section X).

II-A-3-9 Toe protection must be worn in all shops and work areas.

II-A-3-10 Hard hats are required to be worn in all posted areas or where hazards from above exist.

II-A-3-12 Walk - Do not run. Running is permitted only in cases of emergency.

II-A-3-13 Do not enter areas outside your responsibility without obtaining permission.

II-A-3-14 Speed limit on the Plant is 25 mph, except where otherwise posted. Do not exceed the limit.

II-A-3-15 Vehicles must observe posted traffic signs, particularly full-stop signs.

II-A-3-16 Use only established railroad crossings. Do not crawl between, over, or under railroad cars.

II-A-3-17 Do not use extension cords or light cords which do not have a current inspection tag.

II-A-3-18 Gambling is not permitted on the site.

II-A-3-20 No packing is to be used in nitric acid or mixed acid service unless it has been tested for nitration and approved for use by the Plant Laboratory.

II-B - Fires

II-B-1 When a fire alarm is sounded, remain at your job unless you are a member of the Fire Brigade, or unless the fire is in the area where you are working.

II-B-2 Fire protection equipment is for use in case of fire only, and must not be used for any other purpose without orders.

II-B-3 Oily rags, waste, and similar refuse are subject to spontaneous combustion and must be kept or disposed of in the waste cans having self-closing covers.

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II-B-4 Do not place clothing, paper, or inflammables on or near bare steam pipes or radiators.

II-B-5 Men working in Explosive operations must not go close to a fire until their clothing is changed.

II-B-6 Do not take lights of lanterns except those of approved type into explosive buildings. Approved lights and lanterns are marked as approved for explosive operations.

II-B-7 Matches or lighters are not to be carried on the person of any employee within the Plant except as described under special permit procedures in "Safety How", Section IX. Matches or lighters may be left in vehicles entering the Plant, but may not be carried from the vehicle.

II-B-8 Lead burning on explosives equipment or floors in explosives buildings requires a long-form permit and thorough cleaning of the equipment and completion of an "Equipment Cleaning" tag per "Safety How", Section VIII, Page 2.

II-B-9 Where lead is being attached to metal parts which have been used in explosives, the parts must be cleaned and tagged per "Safety How", Section VIII, Page 2.

II-C - Shop Rules

II-C-1 Grinding wheels must be equipped with hood guards.

II-C-2 Grinding wheels must be equipped with Perks safety washers, which cover 1/2 the diameter of the wheel.

II-C-3 Grinding wheel tool rests must be set at not more than 1/8-in. clearance from the wheel.

II-C-4 Only authorized persons are to operate cranes.

II-C-5 Never leave a board with protruding nails; either remove or bend over. Keep material stacked in an orderly manner.

II-C-6 All material over 10 ft in length will be carried by two or more persons. Guard against injury to others when handling long or heavy materials.

II-C-7 Do not use a file without a handle.

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II-C-8 Face shields, gloves, and sleeves down to the wrist must be worn when melting or handling molten metal, pitch, asphalt or other molten material.

II-C-9 Do not use a machine in any of the shops unless you are authorized to do so or special permission is given for a specific job.

II-C-10 Never reach over power saws to get material from the other side.

II-C-11 Never use a power drill on wood that has been used in explosives service.

II-C-12 Painters should always wash their hands before eating if they have been handling paints or painting.

II-C-13 All ropes used for safety lines or hanging scaffolds should be visually inspected before each use.

II-C-14 Approved respirators must be worn at all times while spray painting.

II-C-15 Only approved solvents should be used for cleaning brushes and painting equipment or removing old paint.

II-C-16 Use goggles when chipping paint, wire brushing paint, or spray painting.

II-C-17 Wear welding goggles for burning or gas welding. Wear proper shield when arc welding. Do not watch arc or flame without proper eye protection.

II-C-19 Never use oxygen as a substitute for compressed air or as a source of pressure.

II-D - Area Rules

II-D-1 Do not operate any valve, switch, machine, or other equipment which belongs to an operating area. The responsibility rests with the operation involved for operating valves and switches.

II-D-2 Do not enter any vessel until the "Tank Entry Procedure" has been fully complied with.

II-D-3 When special repair work permits are required, be sure all rules are complied with as indicated on the permit.

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II-D-4 Where work is performed on overhead equipment, the area below should be roped off or otherwise posted to prevent people from passing through this danger area. A "Caution" tag is to be attached to the yellow tape which serves as the "rope". The tag indicates the nature of the hazard.

II-D-5 Do not enter a roped off area unless you have authority to do so.

II-D-7 A mechanic cannot apply a "Danger - Do Not Operate" tag on any piece of equipment in an operating area.

II-D-8 Be sure all guards are properly in place before operating any machine or piece of equipment.

II-D-9 Before removing the guards from any piece of equipment or machinery, be sure that equipment has stopped and is blocked out. Replace guards before machinery is operated.

II-D-10 Ladders placed in service must be tied off at all times, both while working from them and when left in place unattended. Ascending the ladder to tie it or descending after untying the ladder is permitted. After untying, remove the ladder to storage.

II-D-11 Do not stand on top of a step-ladder.

II-D-12 Use a straight ladder long enough to let you stand at least two rungs from the top.

II-D-13 No more than one man may work from or climb a ladder simultaneously.

II-D-14 Safety glasses are the minimum eye protection required in work areas.

II-D-15 The man who breaks a hazardous chemical line must wear complete protective clothing, including hood, jacket, pants, rubber boots, and rubber gloves. See Section III, "Safety How".

II-D-16 For work on dusty jobs where the safety spectacles will not provide adequate protection for the eyes, a specially designed dust goggle must be worn.

II-D-17 Before doing any work on equipment around an operation, Maintenance Department men should first contact the foreman or operator in charge of the operation and block out the equipment.

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II-D-18-1 Safety belts are required when working on roofs, pipe bridges, and other overhead locations where scaffolding or portable platforming is impractical.

II-D-18-2 Wear safety belts properly tied off on all high painting work. Use only approved ladders, scaffold, or ladder jacks.

II-D-19 Men working on roofs must use chicken ladders unless special permission is granted by supervision.

II-D-20 Before welding or burning on a closed container where the possibility of contamination by a combustible material exists (such as condenser shells, jacketed pipe, drums, etc), the container must be opened by some other method and inspected.

II-D-21 Cover or barricade open pits or trenches to safeguard personnel until the job is completed.

II-D-23 Rope off or otherwise protect alllopen excavations.

II-D-24 Connection of well water to any process equipment or piping must be open so there will be no chance of process materials backing up and contaminating the well water supply. All newly installed well water lines are to be sterilized by the Power group before placing in service, as are all existing lines which are contaminated during repair work. Refer to "Safety How", Section III.

II-D-25 Before removing a valve from a line, be sure it is in the open position, eliminating the possibility of liquid or pressure being trapped on one side of the valve. If the valve is not open, have operating supervision open it before proceeding with the job.

II-D-26 Do not make up flanges in pipe machines.

II-D-27 Never use solid gaskets between flanges to blank lines.

II-D-27-1 When solid gasket material is used to back up a blind flange, supervision must approve the installation and a tag must be used to identify the use of the solid gasket back-up.

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II-D-28 Equipment should be properly cleaned and tagged by Operations before repairing, salvaging, or scrapping.

II-D-29 All pipe must be deburred immediately after cutting or threading.

II-D-30 Place "bull's-eye" on rail when working on or obstruct the track. "Bull's-eye" must be placed 100 ft on either side of obstruction on a main track. "Bull's-eye" must be promptly removed when the work is completed.

II-D-31 When working in the Machine Shop, do not wear loose clothing, loose or ragged sleeves, and ties which might get tangled in the machine. Do not wear rings.

II-D-32 All hose connections to the 110-psig system for air tools and similar power equipment must be made at an approved air station which must be equipped with a gate valve, bleed valve, Chicago universal fitting, and a "110-psig Air" sign.

II-D-32-1 All air hoses must be equipped with a Safety air-flow valve, unless otherwise authorized.

II-D-33 Slip blanks must not be used for tank entry except as outlined in the Blanking and Tagging Procedure, "Safety How", Section III.

II-D-34 The air cylinder valve for the air mask must be tagged with a "Danger" tag in the open position by Service Department personnel. Each employee entering a vessel that requires an air mask, either in use or on standby, must place red "DO NOT OPERATE" tag on the cylinder valve.

II-D-35 Special Safety Rules for Repairs to Explosives - See "Safety How", Section XI, or Section III-H-12 of this manual.

II-D-36 Special Rules for Glass Pipe

a. Handle all glass pipe with gloves except when beading, stress relieving, and cutting.
b. Asbestos cloth must be placed under beading kit.
c. Tinted glasses provided with kit must be worn during beading and stress relieving.
d. 20# Dry Chemical Extinguisher must be near work bench.
e. Personnel operating machine must be checked out on equipment by immediate supervision. Owens-Illinois Manual GPD-1066R March 1973, or latest revision, will be complete instruction for the machine.

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III-C-2 Safety Glasses

(Safety Rule) It is expected that you will wear safety glasses as a minimum eye protection while in work areas. In certain areas and on numerous jobs, additional eye protection will be required. This equipment is available to you in each shop or area. Office personnel will also wear safety spectacles whenever it becomes necessary for them to enter or pass through work areas. Safety glasses are the minimum eye protection required in work areas (II-D-14).

III-C-3 Chemical Goggles

III-C-3-1 Coverall chemical goggles or hoods must be worn when you are exposed to acid, caustic, or other corrosive chemicals during repair work on equipment containing these materials, or other circumstances outlined in the various house rules.

III-C-3-2 (Safety Rule) The man who breaks a hazardous chemical line must wear complete protective clothing, including hood, jacket, pants, rubber shoes or boots, and rubber gloves (II-D-15).

III-C-4 Dust Goggles

(Safety Rule) For work on dusty jobs where the safety equipment will not provide adequate protection for the eyes, a specially designed dust goggle must be worn (II-D-16).

III-C-5 Welding

(Safety Rule) Goggles must be worn for all gas welding and face shield for arc welding. Light-resistant shields must be placed around arc welding jobs (II-C-17)

III-C-6 Respirators

Several types of respirators are available which are designed for specific purposes. These types are as follows:

a. Dust and mist respirator.
b. Dust and fume respirator.

If in doubt, consult your foreman on what type respirator to use (see "Safety How", Section VI).

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III-C-7 Face Shields and Hoods

(Safety Rule) On jobs involving concrete cutting, operating buffers, or other operations where safety spectacles do not provide adequate protection against flying particles, a specially designed chipping goggle or face shield must be worn (II-A-3-7). Face shields and hoods are also provided for special cases where added protection for the face and neck is needed. It is not intended, however, that they replace the goggle as eye protection. Consult your foreman on the use of face shields and hoods.

III-C-8 Safety Belts are provided for work above ground. See safety rule, II-A-3-8 and "Safety How", Section X.

III-C-9 Stretchers are provided throughout the Plant for use when an employee must be carried to the Hospital. Stretchers must be visually inspected annually. Use extreme care in handling stretcher cases, as improper handling may aggravate the injury. Persons who have been exposed to gas in such concentrations as to cause ill effects should always be taken to the Hospital in the ambulance.

III-C-10 Safety Showers are provided throughout the Plant inside and outside buildings, and can be located by the green light over the shower and by the green and white color with which each shower is painted. Be sure to know the location of the shower nearest where you are working, and if the need for it arises do not hesitate to use it.

III-C-11 First-Aid Blankets are installed throughout the Plant for emergency use. Report each use so that the blanket can be properly replaced.

III-C-12 Toe Protective Equipment

a. Safety shoes may be purchased at one-half cost through payroll deduction at the Storeroom.
b. (Safety Rule) Toe protection must be worn in all shops and work areas (II-A-3-9).
c. Aluminum foot guards must be worn when using jackhammer.

III-C-13 Hard Hats

(Safety Rule) Hard hats are required to be worn in all posted areas or where hazards from

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above exist (II-A-3-10).

Fiber hard hats with full brim must be worn by I&E personnel in all areas outside of the I&E shops and offices.

III-C-14 Gloves

a. Each supervisor will establish glove requirements for his work group.
b. Asbestos gloves are provided by the Company for use where contact with hot equipment is necessary. Rubber gloves are furnished for the use of employees who might come in contact with acids or other corrosive chemicals due to the nature of their work.
c. Each electrician should have 600-volt gloves.
d. Leather gloves are provided for general maintenance work.

III-C-15 Grinding Wheels

III-C-15-1 (Safety Rule) Grinding wheels must be equipped with hood guards (II-C-1).

III-C-15-2 (Safety Rule) Grinding wheels must be equipped with Perks safety washers which cover one-half the diameter of the wheel (II-C-2).

III-C-15-3 (Safety Rule) Grinding wheel tool rests must be set at not more than 1/8-in. clearance from the wheel (II-C-3).

III-C-15-4 Grinding wheels may be equipped with safety glass shields with adjustable but rigid supporting framework for protecting the worker's face from flying particles. Shields must not replace, but may be used to supplement the standard eye protection. Eye protection requirements are listed at each grinding wheel.

III-C-16 Chain Hoists

Thoroughly inspect all block and tackle, chain hoists, ropes, cables, etc, before use. Do not use unless in safe condition.

III-C-17 Valve and Flange Guards

"Safety How", Section XVI.

III-C-17-1 Used where personnel are exposed to lines carrying nitric acid, sulfuric acid, mixed acid, molten sulfur, or caustic under pressure. Lines carrying other chemicals should be guarded where deemed necessary by the Operating Department.

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III-C-17-2 Valves are to be covered from the stem to the body with a skirt type stainless steel shield (Repauno Sketch No. 319).

III-C-17-3 Flange covered with stainless steel guard (Repauno Sketch No. 329).

III-C-18 Pump Guards - "Safety How", Section XVI.

III-C-18-1 A pump which moves nitric acid, sulfuric acid, mixed acid, caustic, or MEA must have a suitable guard covering all connections where material could leak out.

III-C-18-2 The guard should cover the intake and discharge flanges of the pump.

III-D - Maintenance Procedures

III-D-1 Do not undertake any job unless you know the correct method of doing that job.

III-D-2 Do not use any broken or defective tools or equipment. Use only the proper tool or equipment for the job. Chisels with mushroomed heads, split shovel and hammer handles, damaged ladders, are only a few examples of defective tools which must not be used. Keep your tools clean and in good working condition.

III-D-3 Do not leave tools lying on pipes, scaffolds, step-ladders, ledges, etc; they might fall and seriously injure someone below.

III-D-4 Makeshift equipment should never be used to work from or stand on; use only standard equipment.

III-D-5 Do not attempt to move or lift heavy loads without help. When lifting, keep the back straight and use the legs to lift the load.

III-D-6 Ladders and their Use

III-D-6-1 Keep ladders clean of grease, oil, and dirt. Wooden ladders are not to be painted, as this would hide cracks or other defects, but should be treated with linseed oil or spar varnish to protect them against weather and rot.

III-D-6-2 Never leave a ladder where it may fall.

III-D-6-3 Ladders stored in a horizontal position should be supported at a sufficient number of points to avoid sagging and permanent set.

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III-D-6-4 Check the color and condition of the ladder, rope, and feet before using. When a ladder is found to be defective, a "Caution" tag noting the defect should be fastened to the ladder and the ladder removed from service and sent to the shop for repair or replacement.

III-D-6-5 Place the ladder feet on a level, solid footing.

III-D-6-6 Protect the ladder base from pedestrian or vehicle traffic.

III-D-6-7 Open step-ladders fully so that the spreader locks itself in the fully opened position.

III-D-6-8 In raising a long straight ladder, have someone hold the base, if possible. Otherwise, block the base against something solid. Extension ladders must be handled by two men whenever they are raised, lowered or moved.

III-D-6-9 Place straight ladders at a safe angle against the wall or other solid backing. The slope of the ladder should always be such that the foot is out from the vertical line from the top by 1/4 its height. The side rails should extend 3-1/2 ft above a top landing or scaffold platform.

III-D-6-10 Ladders placed in service must be tied off at all times, both while working from them and when left in place unattended. Ascending the ladder to tie it or descending after untying the ladder is permitted. After untying, remove the ladder to storage.

III-D-6-11 Use rubber feet on smooth surfaces, and spiked feet for outside ground surfaces. While the rubber foot generally eliminates the need for use of a plank on solid (e.g., concrete) footing surfaces, it should be remembered that, where the surfaces are covered with grease, oil, xylol, etc, the spike foot and a plank should be used. If the foot is turned up, the rubber pad should be on the outside of the ladder, facing the user.

III-D-6-12 Set up the ladder so that you can reach your objective easily; never lean far out from a ladder in any direction.

III-D-6-13 Always face the ladder and use both hands when climbing up or down.

III-D-6-14 Carry tools and materials in a suitable pocket or bag, or have them hoisted with a rope.

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III-D-6-15 Use a ladder belt if the character of the work requires it.

III-D-6-16 Tools should never be left on a ladder unless tool holders are provided.

III-D-6-17 (Safety Rule) Men working on roofs must use chicken ladders unless special permission is granted by supervision (II-D-19).

III-D-6-18 (Safety Rule) Do not stand on top of a step-ladder (II-D-11).

III-D-6-19 (Safety Rule) Use a straight ladder long enough to let you stand at least two rungs from the top (II-D-12).

III-D-6-20 (Safety Rule) No more than one man may work from or climb a ladder simultaneously (II-D-13).

III-D-7 Lifting Objects

III-D-7-1 Bend your knees to put the strain on your leg muscles.

III-D-7-2 Crouch down with your feet close to the object.

III-D-7-3 A straight back makes your leg muscles do the work.

III-D-7-4 Keep your feet rather close together - between 8 and 12 inches apart.

III-D-7-5 Place your hands in lifting positions.

III-D-7-6 Lift slowly and safely by straightening your knees and standing erect.

III-D-7-7 Never lift an object while standing in a strained position.

III-D-7-8 Save effort and prevent straining by carrying weight on one shoulder. This method leaves the lower limbs free and the chest unrestricted.

III-D-7-9 Secure help when handling heavy or bulky items. Be alert for splinters, broken glass, nails, etc.

III-D-8 Crane and Rigging

III-D-8-1 Avoid driving, standing, or walking under a crane boom or a load suspended from a crane boom.

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III-D-19-13 Acetylene should be flowing freely before lighting torch. This is essential to prevent flashbacks.

III-D-20 Do not stand in front of skids or rollers when heavy material is being moved on them.

III-D-21 (Safety Rule) Cover or barricade open pits or trenches to safeguard personnel until the job is completed (II-D-21).

III-D-22 All machinery must be oiled at regular intervals. Empty oil drip pans frequently. Keep floors and machinery clean of oil and clean up spills immediately.

III-D-23 Do not stand materials against bench or wall where they may fall. Lay flat or tie in place.

III-D-24 Good housekeeping is essential for efficient workmanship. Keep all scraps and rubbish in boxes or containers provided. Materials and equipment should be stored neatly and safely.

III-D-25 (Safety Rule) Do not use extension cords or light cords which are not in good condition and which do not have a current inspection tag (II-A-3-17).

III-D-26 When breaking flanges in a pipe line or removing a flange from a vessel, take an operating position above the flanges, if possible. First, take all precautions to insure the line being free of pressure and liquid. Do not take all bolts out until after breaking the joint. Loosen the bottom bolts first and then the top bolts just enough to allow the flange to be sprung and any pressure or liquid released. Stand away when springing the flanges or actually breaking the line, and break line away from you.

III-D-27 (Safety Rule) The man who breaks a hazardous chemical line must wear complete protective clothing, including hood, jacket, pants, rubber boots, and rubber gloves. See Section III, "Safety How" (II-D-15).

III-D-28 No hose for steaming should be connected to a line carrying over 25 lbs of pressure and all steam hose must be used with extreme care. Use of higher pressure requires special permission. All steam hoses will be of the approved type and orders approved by Pipe Shop supervisor.

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III-D-37-7 Correspondence files must be fastened to walls, or back to back to each other, to prevent tipping. Be sure your fingers and other parts of the body are in the clear before closing the drawers.

III-D-38 Painting

III-D-38-1 (Safety Rule) Painters should always wash their hands before eating if they have been handling paints or painting (II-C-12).

III-D-38-2 (Safety Rule) All ropes used for safety lines or hanging scaffolds should be visually inspected before use each day and static load test to 900 lb every six months (II-C-13).

III-D-38-3 (Safety Rule) Approved respirators must be worn at all times while spray painting (II-C-14).

III-D-38-4 Only approved and tested scaffold planks may be used.

III-D-38-5 Special care should be used in securing covers on spray paint pots and the gauge pressure checked to insure against excess pressure in case of failure of the safety valve. Connect up to proper pressure.

III-D-38-6 (Safety Rule) Only approved solvents should be used for cleaning brushes and painting equipment or removing old paint (II-C-15).

III-D-38-7 (Safety Rule) Use goggles when chipping paint, wire brushing, or spray painting (II-C-16).

III-D-38-8 Use only proper containers for solvents.

III-D-38-9 (Safety Rule) Wear safety belts properly tied off on all high painting work. Use only approved ladders, scaffold, or ladder jacks (II-D-18-2).

III-D-38-10 Do not walk on pipe lines, conduit, etc; use a ladder or a scaffold. On large pipe bridges it is permissible to straddle the pipe, provided a safety belt is worn and secured around the pipe.

III-D-39 Pipe Shop

III-D-39-1 (Safety Rule) Do not make up flanges in pipe machines (II-D-26).

III-D-39-2 All pipe not being worked on must be properly stored. Never store pipe within pipe.

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III-D-39-3 (Safety Rule) Never use solid gaskets between flanges to blank lines. (Use solid blanks as per "Safety How", Section III, 9F.) (II-D-27)

III-D-39-4 In moving long lengths of pipe (larger than 2 in.) from a pile, do not stand in front of the pipe, but grasp at the end to avoid being struck by rolling pipe.

III-D-39-5 Where oil has been used for cutting or threading pipe, it must be cleaned off before "making up" joints. Use the approved compound for the service on the threads before "making up" joints.

III-D-39-5-1 PVC Pipe

Respiratory protective devices (MSA "Dust Foe" or equivalent) will be worn when cutting, forming, machining, or otherwise handling PVC to produce dust.

Indoor storage of PVC stock will be limited to working storage. As a guide, no more than twenty-five (25) lengths of twenty (20) feet each should be stored in single building at any one time.

Welding techniques are limited to solvent cementing by use of couplings. Hot-air welding is not permitted.

Fabrication is limited to physical techniques, i.e., cutting, milling, machining, etc. Hot-air or heated forming is not permitted.

PVC dust and scraps generated during fabrication should be collected and immediately disposed of in outdoor containers.

III-D-39-6 (Safety Rule) All pipe must be deburred immediately after cutting or threading (II-D-29).

III-D-40 Railroads

III-D-40-1 Use standard "bull's-eye" as a warning signal when working in or about railroad cars or equipment, working on the track or any crossing, or when it is necessary to obstruct the track. Block-out each end of the car or string of cars when any one of a string is being worked on. Any car within 20 ft of another on the same line is considered part of the string. See "Safety How", Section III.

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III-H-9-1 (Safety Rule) Slip blanks must be used for tank entry except as outlined in the Blocking and Tagging Procedure (II-D-33).

III-H-9-2 Slip blanks for use in blocking lines at pipe flanges shall be used in the following manner:

a. For pipe size up to and including 6 in. where internal line pressure will not exceed 10 psig, 1/8-in. stainless steel blanks may be used.
b. All other uses of slip blanks shall conform with Engineering Standard P 9 E.
c. The blank handle shall have a lift hole drilled in the end and this half of the handle shall be painted red for ready identification.
d. A signed and dated "CAUTION" tag shall be affixed to the blank handle, describing reason for use. The responsibility for affixing "CAUTION" tags to blank handles belongs to the operating department, except where pressure tests are being made, the mechanic installing the blank will affix the "CAUTION" tag. Where blank is to be semi-permanent, a permanent metal tag must be used in place of the "CAUTION" tag. (Preferably black on yellow.) In cases where the slip blank is used as part of blocking out equipment for repairs, a signed and dated "DO NOT OPERATE" tag should be used.
e. Slip blanks may be used for hydrostatic testing, provided no danger to personnel or of product reaction exists if the blank should rupture. All blanks shall conform to Engineering Standard P 9 E.

III-H-10 Respiratory Protective Equipment - "Safety How", Section VI

III-H-10-1 Breathing air shall be supplied from a self-containing breathing apparatus. This apparatus consists of certified breathing air cylinders, low pressure alarm, pressure reducing regulators, air hose, flow demand regulator, and face mask mounted on a portable trailer.

III-H-10-2 (Safety Rule) The air cylinder valve for the air mask must be tagged with a "DANGER" tag in the open position by Service Department personnel. Each employee entering a vessel that requires an air mask either in use or on standby, must place red "DO NOT OPERATE" tag on the cylinder valve (II-D-34).

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III-H-10-3 Qualified Service Department personnel shall provide, set up, and test breathing air for area personnel use when requested.

III-H-11 Heat-Producing, Lighting and Sparking Permits - "Safety How", Section IX

III-H-11-1 Long-Form Permits

This form provides the maximum protection against an ignition and should be used whenever the conditions of the area constitute a serious hazard. Prior to any burning or welding job where a long form is required, a meeting shall be held to establish a safe procedure. If a fire watch is required, see Section IX-4 and -8. When possible, this meeting should be held at least three days prior to the start of the job.

The meeting three days prior to welding may be eliminated for repetitive jobs. However, the precautions and requirements must have already been established and recorded. A Long-Form Permit will be valid for no more than one month from date of issue on repetitive jobs provided no conditions have changed. The meeting should be attended by the Senior Supervisor or designated representative of the operating area, Area Maintenance Supervisor or designated representative, Boiler Shop Supervisor, or Maintenance Supervisor responsible for job and ERD representative. Meeting to be called and conducted by the Area Maintenance Supervisor or designated representative.

The approval of the Fire Department may be waived by area supervision in charge in cases involving chipping and drilling, but permits must be signed by all other responsible groups. When Fire Department approval is waived, it should be noted in the space for this approval.

During the 4x12, 12x8 shifts, and on weekends, the operating supervision in charge may sign for the Department Superintendent or Assistant Superintendent, after obtaining his verbal approval to do the work.

Because fire watchers for welding, burning, etc, jobs in the various areas may be drawn from any operation on the Plant and have received no special training, there is a definite need for a set of rules to be handed to any person assigned the duties of fire watch. The Fire Watcher's Duties Card, Welding Permit, which is part of the Long-Form Welding Permit, fulfills this purpose. It is the responsibility of supervision furnishing the fire watch to personally review the duties with the person assigned to the job of fire watch.

The fire watcher must retain this card in his possession at all times, and attach it to his clothing in full view to identify him as a fire watcher.

III-H-11-2 Short-Form Permits

This form is used when the possibility of an ignition is remote, but yet a possibility of an ignition could exist.

Approval of the Fire Department may be waived by operating supervision, but in such cases, it should be noted on the form in the space provided for Fire Department.

III-H-15 Outside Contractors - "Safety How", Section XV

Prior to a contractor beginning work on Repauno, a safety conference shall be scheduled by the supervisor responsible for the work. The safety conference shall include the contractor, a member of both area Maintenance and Operations supervision, and the construction supervisor where applicable.

The contractor must comply with minimum safety requirments and any other which may affect Repauno employees or operations.

III-H-16 Hazardous Chemical Systems Repairs - "Safety How", Section III

III-H-16-1 Definitions

a. Hazardous Chemical - Any gas, liquid, or solid, due to its toxicity, corrosiveness, temperature, quantity, pressure, or flammability, that may cause personal injury. (The chemicals and services on Repauno that are not considered hazardous are identified under Exemptions, Section VI, of this procedure.)

b. Hazardous Chemical System - Pipelines, vessels, drums, and equipment which contain and make direct contact with hazardous chemicals are the components which make up a hazardous chemical system.

c. Full Protective Equipment - Acid hood, jacket, pants, rubber boots, and rubber gloves.

Additional equipment may be required for additional hazards (i.e., temperature and flammability require equipment of heat-protective material - toxic fume conditions require breathing equipment).

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d. Minimum Protective Equipment - The residual chemicals which remain in a system even after the initial draining and blanking constitute a hazard to personnel which justifies the wearing of certain protective equipment until the system has been completely flushed and drained. The personal protective equipment which is considered the minimum essential for work during this phase of the work is spelled out in Section III-H-16-6.

III-H-16-2 Procedure and Responsibilities

A. All personnel must accept responsibility for adhering to the following rules governing work on hazardous systems:

1. Phase I - Initial breaking, draining, and blanking.

a. Full protective equipment must be worn.

2. Phase II - Flushing and final draining.

a. Minimum protective equipment requirements as spelled out in Section III-H-16-6 must be worn.

3. Phase III - Safe Systems.

a. Following completion of Phases I and II, there are no requirements for special protective equipment; however, nothing in this procedure shall limit additional protective equipment which the individual may believe is justified.

4. Phase IV - Reconnecting.

a. Full protective equipment must be worn.

B. Whenever Mechanical Supervision believes that either the above requirements are not justified or that additional protective equipment is required, then the "Hazardous Chemical Systems Repair Permit" should be issued by the Mechanical Supervisor responsible for the job.

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III-H-16-3 Precautions

The area should be roped off to a safe distance.

A running water hose must be provided for use in place of a safety shower when the work is remote from a regular shower. The mechanic should install a "DANGER" tag on water hose valves used for this purpose and include reason for tagging.

Take special care with chemicals that freeze at ambient temperatures; they may be trapped in various sections of a chemical system. Anyone not wearing the required protective equipment must remain at a safe distance while work is being done on a hazardous chemical system.

Standard practice in breaking a flange is to first remove the nuts on the lower and opposite side to that on which the man is working. Where the hazard of the material warrants and when the work is to extend over a period of time, all open pipes should be capped or blanked.

III-H-16-4 Exemptions - General

Certain systems are not considered sufficiently hazardous to be considered as hazardous systems. These are:

a. Plant general and instrument air.
b. Nitrogen.
c. Domestic, process and fire main water (less than 50°C).
d. "Freon", brine and weak methanol solution used for refrigeration.
e. Solid chemicals where hazards from liquid state no longer exist (e.g., sodium nitrite, soda ash, ammonium nitrate).
f. Steam hose stations - 25 psi.
g. Tracing steam - 150 psi or less.
h. Steam condensate - trap and strainer maintenance only (150 psi or less).

III-H-16-5 Permanent Exemptions to This Procedure for Specific Jobs

Requests for a permanent exemption from this procedure for a specific job must be submitted to the Safety Standards Committee for approval (see Form III-A-6). Upon approval, each specific exemption will be listed as part of this procedure. The detailed write-up of the job will be maintained in the Production Department and a copy forwarded to the Mechanical Department.

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III-H-16-6 Minimum Protective Equipment Required for Repairs for Drained Hazardous Chemical Systems

	Acid Suit or "Gralite" Suit	Neoprene-Coated Gloves	Leather Gloves	Acid Goggles or Face Shield	Water Hose Available	Rubber Boots	Respiratory Protection
Acid, Mixed, Nitric, NSA, Sulfuric, Waste, Hydrochloric	x	x		x	x	x	
Ammonia, Anhydrous	x	x		x	x	x	
Ammonia, Aqua		x		x			
Aniline	x	x		x	x	x	
Benzene		x		x			
Caustic Solution	x	x		x	x	x	
DIB		x		x	x		
Dowtherm		x		x			
DPA - Molten	x	x		x	x	x	
Durene	x	x		x	x	x	
Hydrogen Peroxide	x	x		x*	x		
Methanol		x		x	x		
Neutral Liquor (NH_4NO_3)		x		x	x		
Nitrite Solution ($NaNO_2$)			x	x			
Nitrobenzene	x	x		x	x	x	
NO_2 Gas			x	x			
OCA	x	x		x	x	x	
OLPA (Molten)	x	x		x	x	x	
PMA			x	x			x
PMDA		x		x			x
SO_2-SO_3 Gas			x	x			
Soda Ash Solution			x	x			
Sulfamic Acid		x		x			
Sulfur - Molten	x	x		x		x	

*Special equipment provided by Production Department.

NOTE: Respiratory equipment should be used if deemed necessary by operations and/or maintenance.

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h. When a substation bus is de-energized and grounded, be sure a ground path exists for the transformer windings to allow the winding capacitance charge to dissipate.

III-K-6-2L Electric Shop - Pole Climbing Rules

a. Pole climbing is to be done only by qualified Electric Shop personnel.
b. Check climbing equipment before each use. Fasten on spike covers when spikes are stored.
c. Be sure that electric lines are de-energized and tested for voltage before working on them. In addition, de-energized high voltage lines (2300 volts or above) must be grounded between the work area and each possible source of power.
d. Gauntlet gloves must be worn while climbing a pole. The wearing of long-sleeved shirts is recommended.
e. When a working location has been reached, the safety belt must be fastened.
f. Hand lines must be used for raising and lowering tools and materials to and from a man on a pole. No throwing or dropping of tools and materials is permitted.
g. Avoid standing directly under a man working on a pole.
h. Any obstacles within 3 ft of a pole should be removed before climbing.

III-L - Tags

III-L-1 A "Caution" tag may be applied by personnel in either the Maintenance or operating departments when the situation warrants it. These tags must be dated and signed, and should carry a minimum of information. These tags are of a temporary nature and should not be used for extended periods.

III-LA "Danger" Tags - "Safety How", Section III.

III-LA-1 The "Danger" tag is considered in the same category as a lock, and it is a serious safety rule violation to operate any equipment that is tagged, or to remove a tag without proper authority.

III-LA-2 "Danger" tags are to be used under only two circumstances:
a. Block-out of equipment for repairs.
b. Block-out of equipment where operation or handling presents a serious safety hazard.

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III-LA-3 Each tag must be signed and dated by the person applying it, designating the Shop also, if applied by a craftsman. The reason for applying the "Danger" tag MUST be written on the tag. A paper "Danger" tag is to be used only ONCE, then destroyed.

III-LA-4 Small "Danger" tags with adhesive backing are to be used on control panels where the large tag may cover up essential information on the panel.

III-LB "Do Not Operate" Tags (Round Plastic Key Chain Type) - "Safety How", Section III.

III-LB-1 The red "Do Not Operate" tag is to be used when red block-out (individual block-out) is in effect (see Section III, Page 8).

III-LB-2 The green "Do Not Operate" tag is to be used when green block-out (supervisory block-out) is in effect (see Section III, Page 9).

III-LC "Job Not Complete" Tags (Round Plastic Key Chain Type - "Safety How", Section III.

III-LC-1 This tag is to be used during shift changes when the red block-out procedure is in effect (see Section III, Page 9).

III-LD "Electric Out of Service" Tags - "Safety How", Section III.

III-LD-1 The purpose of the "Electric Out of Service" tag is to indicate and limit the operation of disconnects and controls of equipment that have been taken out of service for electrical work.

III-LD-2 An "Electric Out of Service" tag should be installed by the operating department on the disconnects and controls of the equipment that requires electrical work. The reason for applying the tag must be written on the tag. The tags will remain in place until the I&E Shop mechanic signs his name on the line marked "Work Completed".

III-LD-3 "Electric Out of Service" tags are to be used only ONCE, and then destroyed.

III-LD-4 Electrical equipment may be energized with "Electric Out of Service" tags installed. The member of the operating department who installs the tags should indicate conditions under which equipment may be operated by checking the proper block on the tag.

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III-LD-5 The tag has three spaces for signatures; the first space is for the member of operations who installs the tag, the second is for the I&E Shop mechanic(s) who will perform the work, and the third is for the I&E Shop mechanic to sign after the work has been completed.

III-LD-6 The "Electric Out of Service" tag does not take the place of a lock for maintenance personnel protection. The use and limitations of this tag are described in Blocking Out Equipment for Electrical Work (Electrical Work Procedure No. 1, Pages 11 through 15, "Safety How", Section III).

III-LD-7 When it is necessary to change I&E Shop personnel who are working on equipment, or the work is interrupted and other I&E Shop personnel are assigned to the work at a later time, the relief I&E Shop mechanic(s) assigned to the job must sign the tag and line out (not erase) the other mechanic's name.

III-LE <u>"Caution" Tags</u> - "Safety How", Section III.

III-LE-1 "Caution" tags are informational tags. They may be used in any situation where it is desired to impart cautionary information to anyone who may handle the item to which the tag is attached. They should be used for information of a temporary nature only. Where cautionary information must remain over 30 days, a stamped metal tag should be used.

III-LE-2 Each tag must be signed and dated by the person applying the tag. No tag should be applied unless some information is written on it explaining the reason for its use.

III-LE-3 Do not use the "Caution" tag where a "Danger" tag is intended.

III-LE-4 Small "Caution" tags, with adhesive backing, are to be used on control panels where the large tag may cover up essential information on the panel.

III-LF <u>"Special Instructions" Tag</u> - "Safety How", Section III.

III-LF-1 "Special Instruction" tags are green-bordered tags used to give special instructions of an operational nature.

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III-LP-2 These tags should not be used in place of a "Danger" or "Caution" tag to impart messages warning of danger or caution.

III-LP-3 These tags may be used at the discretion of each department.

III-L-2 Tag for Preparing Equipment for Repairs - "Safety How", Section VIII.

III-L-3 Tag for Waste Material Delivered to the Burning Ground - "Safety How", Section VIII.

III-L-4 Long and Short Form Permits for Heat-Producing, Lighting, and Sparking Tags - "Safety How", Section IX.

III-LH Construction Block-Out - "Safety How", Section III-E-16.

III-LH-1 This procedure provides for a block-out which will be applied to new construction that is tied into a system that is in use. It is intended to prevent premature use of facilities that are not completed.

III-LH-2 The "Red Construction Block-Out" tag will be furnished and installed by the Mechanical Construction supervisor. The tag will be signed and dated by the Construction supervisor and the Operating Area supervisor.

III-LH-3 Construction block-out tags will be removed by the Construction supervisor when the job is completed and the equipment is turned over to the Operating Department.

III-LI Air Conditioning Block-Out, "Safety How", Section III-E-14.

III-LI-1 Used by Power and Air Conditioning Mechanics working on air conditioning equipment. Maintenance work is not permitted on air conditioning equipment not having an "Air Conditioning Out of Service" tag on the disconnect operating handle and control.

III-LI-2 It will be used for diagnostic and trouble-shooting work only. Normal locks will be required while actual work on equipment is being performed.

III-LI-3 The Power Department must shut down equipment and install signed "Air Conditioning Out of Service" tags on switches and controls.

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III-M-14-5 Pipe Shop inspects, tests, and purchases the hose, couplings, and associated material.

III-M-15 Tools - "Safety How", Section XIV

III-M-15-1 Both Company-owned and personally owned tools are inspected each quarter.

III-M-15-2 Check lists are maintained by each department.

III-M-16 Freight Elevators - "Safety How", Section XIV, Inspected every month.

III-M-17 Hydrogen Unloading Hoses - "Safety How", Section XIV

III-M-17-1 Tested semi-annually at 3000 psi.

III-M-17-2 Certified hoses when purchased.

III-M-17-3 Tags on hoses to identify each hose and inspection due date.

III-M-18 Impact Wrenches and Sockets - "Safety How", Section XV

III-M-18-1 Inspected quarterly, with quarterly tool inspection.

III-M-18-2 Ordered through Maintenance Shops.

III-N - Tools

III-N-1 Take time to get the proper tool; the job will be done safer and in less time.

III-N-2 Inspect all tools at least once a month; repair or discard any that are not in good condition.

III-N-3 Do not carry sharp-edged or sharp-pointed tools in your pockets unless edges and points are protected.

III-N-4 Avoid using tools not properly sharpened, with mushroomed heads, cracked or broken handles, without handles, or otherwise defective.

III-N-5 Keep tools available by replacing them in their proper box or holder after finishing your piece of work. All electrical hand tools must have proper grounding and electric cord inspections.

III-N-6 Impact wrenches and sockets are ordered through the Maintenance Shops. See "Safety How", Section XV, for size and type.

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Note: 3/4-in. and larger wrenches must be the type to accomodate the pin and "O"-ring method of fastening sockets and extensions. Sizes with drives less than 3/4 in. must be the type utilizing the friction ball or lock button method of fastening the sockets.

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