

PLAINTIFF'S EXHIBIT

DOW-1806

MINIMUM REQUIREMENTS



ST0091613

THE DOW CHEMICAL COMPANY

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3RD EDITION



These Minimum Requirements for Safety, Loss Prevention and Security are intended as the basis upon which Areas and their respective units can build their own specific programs.

We believe these Minimum Requirements are important and we expect compliance as a way of life to assist in achieving the Company's goals of providing a safe workplace for each of its employees and of protecting its plants and property.

Where existing facilities do not meet these requirements it is expected that a plan for compliance will be developed and implemented with a firm time commitment to Management.

Signed,

P. F. OREFFICE
President and Chief Executive Officer

H. W. HENRY
Executive Vice President
President, Dow Chemical U.S.A.

R. M. KEIL
Executive Vice President

K. R. McKENNON
Group Vice President

D. P. SHEETZ
Vice President
Corporate Director of R & D

J. G. TEMPLE, JR.
Executive Vice President

E. J. SOSA
President, Dow Brazil

J. D. HEMBREE
President, Dow Canada

F. P. POPOFF
President, Dow Chemical Europe, S.A.

W. S. STAVROPOULOS
President, Dow Chemical Latin America

C. D. GOODCHILD
President, Dow Chemical Pacific

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BASIC POLICY AND MINIMUM REQUIREMENTS FOR SAFETY, LOSS PREVENTION AND SECURITY

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INTRODUCTION

These Minimum Requirements represent the fundamental basis for the Safety, Loss Prevention and Security programs of all Dow Areas and facilities. They are aimed at maintaining an ongoing program to ensure the safety, health and security of all Dow employees and to reduce the probability and magnitude of property loss.

All Dow Areas and facilities are expected to develop and regularly audit their own specific policies and detailed requirements consistent with these Minimum Requirements and local government regulations to meet the need of their workplace, i.e. manufacturing sites, sales offices, research units, service units or other functions.

BASIC POLICY

Employees of The Dow Chemical Company must perform in such a manner as to prevent incidents which can cause personal injury, illness or loss of proprietary information and Dow facilities must be designed and operated to prevent property loss and interruption to our business.

Every employee is expected to comply with established rules and procedures as a condition of employment and to participate in the Safety, Loss Prevention and Security program. Safety performance and attitude shall be considered major and essential employee job performance measurement criteria.

Safety, Loss Prevention and Security are the direct responsibility of line management and are important measures of managerial performance. In order to insure that every employee is prepared to work safely, every supervisor has the responsibility to provide a safe work environment with proper equipment and adequate training. Each supervisor also has the responsibility, through personal example and the involvement of all employees, to create a climate in which everyone shares concern for the safety and security of their fellow workers and for the prevention of losses.

Line management has a responsibility to monitor and assess all changes in process technology and work procedures in order to continue to provide a safe, secure work environment.

A Safety, Loss Prevention and Security function is provided by the Company, on a Corporate, Area and location basis, to assist line management in implementing these responsibilities.

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MINIMUM REQUIREMENTS

SAFETY:

Each location shall establish a safety program designed to maintain a safe and healthy work environment for employees. This program must incorporate the following elements:

ACCIDENT/INCIDENT INVESTIGATION AND REPORTING

Each location shall promptly investigate, thoroughly analyze, correct, communicate and report in writing to appropriate members of management: all accidents/incidents involving or having significant potential of causing personal injury, property damage or loss, business interruption and all crimes or fraud against the Company. *References: "Dow Guidelines for Accident Investigation" and "Dow Guidelines for Safety and Loss Prevention Reporting."*

AUDITS

Each location shall have regular internal and external audits of their operations for compliance with the Minimum Requirements. *Reference: "Dow Guidelines for Safety and Loss Prevention Audits."*

CONFINED SPACE ENTRY

Each location shall have and enforce rules for safe entry into tanks, vessels, manholes and other enclosed or confining spaces. Provisions shall include requirements for written authorization, oxygen and explosivity testing, ventilation, isolation, lock out, monitoring and rescue.

CONTRACTOR SAFETY

Each location shall require contractors and sub-contractors to have and enforce Safety, Loss Prevention and Security standards. This must be a job specification and integral part of each contract. *Reference: "Dow Guidelines for a Contractor Safety and Loss Prevention Program."*

DE-ENERGIZING AND RED TAG PROCEDURES

Each location shall have and enforce rules for de-energizing, lock out, red tagging and field testing of power driven equipment prior to any work that requires exposure to unguarded equipment or hazards caused by unexpected starting.

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EMPLOYEE TRAINING AND JOB OPERATING INSTRUCTIONS

Each location shall have and observe policies and requirements that provide for initial and continuing training of all employees.

GOVERNMENT REGULATIONS

Each location shall have safety regulations equal to or better than applicable government safety regulations and shall provide methods in the organization for monitoring compliance to same.

GUARDING AND INTERLOCKING

Each location shall have and observe policies and requirements for the guarding and interlocking of mechanical and other equipment when there is a reasonable probability that an injury can be prevented by such action.

HOT WORK AND SMOKING

Each location shall have and enforce rules for the control of smoking and of any work or operation of any equipment that may act as a source of ignition in areas where flammables and combustibles are present, e.g. welding, cutting, grinding, liquid or powder transfers, etc.

JOB AND PROCESS OPERATING PROCEDURES

Each location shall develop written job and process operating procedures which should be reviewed annually. Changes shall be implemented only after appropriate management review.

LADDERS, SCAFFOLDING, WORK SURFACES, ETC.

Each location shall have and enforce rules requiring safe equipment and use of safety devices for work that cannot be done safely from the ground or from permanent flooring or platforms.

LINE AND EQUIPMENT OPENING

Each location shall have and enforce rules for safe line and equipment opening operations.

PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT

Each location shall have and enforce rules for the wearing of eye, hand, body, face, head, hearing, respiratory and foot protection when there is a reasonable probability that injury can be prevented or minimized by use of such equipment. *References: "Dow Guidelines for Personal Protective Clothing and Equipment," "Dow Guidelines for Hearing Conservation" and Dow "Industrial Hygiene Protective Equipment Effectiveness Resources Manual (PEER)."*

SAFE OPERATION OF MOTOR VEHICLES AND MOTORIZED HANDLING EQUIPMENT

Each location shall have and observe policies and requirements for the safe operation of all motor vehicles, including operator driven material handling equipment and work platforms. *Reference: "Dow Guidelines for a Motor Vehicle Accident Prevention Program."*

TESTING OF EMERGENCY ALARMS AND PROTECTIVE DEVICES

Each location shall have and enforce rules for the regular testing of emergency alarms, protective and emergency devices and all devices critical to the continued safe operation or orderly shutdown of operations.

LOSS PREVENTION:

Each location shall establish a loss prevention program based on hazard evaluation and designed to reduce the probability and magnitude of incidents. Loss prevention performance and attitude shall be considered an essential component of every employee's total performance. Programs must include the following elements:

(References to Loss Prevention Principles (LPP) have titles included in the reference appendix)

BUILDINGS AND STRUCTURE DESIGN

All buildings containing people or vital equipment shall be adequately separated from process units and designed with adequate fire and explosion resistance. In addition they shall be protected against exposure to toxic or hazardous substances and designed to withstand natural forces (e.g. wind, earthquake). *References: LPPs 2.2, 12.1, 12.2, 12.3, 12.4, 12.5 and 17.2*

CAPITAL PROJECT REVIEW

All capital projects during the design and construction phases shall have Safety, Loss Prevention and Security reviews including reactive chemicals and industrial hygiene. They shall be given pre-startup audits. *References: LPPs 1.2 and 1.3.*

COMBUSTIBLE DUSTS

All plants handling combustible dusts shall be designed and operated with preventive and protective features against dust explosion. *References: "Dow Guidelines for Determining Dust Hazard Potential," LPPs 10.14 and 11.1.*

ELECTRICAL

Electrical installations shall be designed and well documented to:

- Conform to national codes/local regulations.
- Provide a reliable power source.
- Protect primary equipment with alarms and shutdown relays. (These devices shall be tested at appropriate intervals.)
- Provide an emergency power supply for equipment that may become a hazard under normal power source failure.
- Provide for grounding and bonding with regular testing.

References: LPPs 3.1, 3.4, 3.5 and 3.6.

EMERGENCY PLANNING

Each location shall maintain an emergency plan which:

- Provides for all people (Dow and non-Dow)
- Provides a firefighting organization
- Is co-ordinated with the local community and industrial neighbors
- Is field tested and documented at least annually
- Covers all potential incidents relative to that location, e.g. utility loss, hazardous/toxic release, fire, explosion, civil unrest, bomb threats, and natural disasters.

References: "Dow Guidelines for Emergency Planning," LPP 15.3.

EQUIPMENT AND PIPING

Equipment, piping and subsequent maintenance modifications, shall conform to the best design, fabrication, installation and documentation practices. Registration and inspection shall conform to applicable Dow and governmental requirements. *References: LPPs 6.8 and 6.9.*

FIRED EQUIPMENT

Burner management and combustion control systems shall be provided. Fired equipment shall be located to minimize its potential as an ignition source for process areas. All equipment and protective systems shall be regularly inspected and tested. *References: LPPs 2.2, 10.13, 13.1, 13.2 and 13.5.*

FIRE PROTECTION SYSTEMS

All locations shall establish and implement an inspection and maintenance program for fire protection equipment and water supplies. All locations shall have an adequate, reliable source of fire water sufficient for the area. Impairment of fire protection systems shall be treated as an emergency and immediate repairs shall be made or alternative protection provided. *References: LPPs 4.5, 10.3 and 10.13.*

FIREFIGHTING CAPABILITY

Each location shall have made provisions for firefighting support consistent with the types of hazards present, extent of fixed fire protection present, and availability of Company and local manpower/equipment support.

FLAMMABLE LIQUIDS AND GASES

Before flammable vapor-air or gas-air mixtures are allowed to exist in the flammable or explosive range, the potential for ignition must have been determined and preventive/protective measures taken. *References: LPPs 7.1 and 7.3.*

FLEXIBLE JOINTS IN HAZARDOUS SERVICE

Each location shall have procedures to control the use and maintenance of flexible joints in hazardous service.

FRAGILE DEVICES IN HAZARDOUS SERVICE

Each location shall have procedures controlling the use and maintenance of fragile devices in hazardous service, such as sight glasses, bull's-eyes, sight ports, rotameters and glass piping. *Reference: LPP 6.9.*

INSTRUMENTATION

Instrumentation and interlocks shall be installed to monitor and/or control critical parameters such as temperature, pressure, reaction rate etc., which may be indicative or lead to the existence of hazardous conditions. They shall be redundant and/or physically independent of control devices as dictated by the control logic.

All control instrumentation shall fail safe and emergency controls shall be located for rapid response. All devices critical to continued safe operation or orderly shutdown shall be regularly tested. *References: LPPs 3.1, 15.1, 15.2, 15.3 and 15.5.*

LEAK AND SPILL CONTROL/CONTAINMENT

Facilities for detection of leaks and spills and the ability to isolate significant quantities safely shall be installed when handling hazardous materials. Protective features shall be installed to minimize the potential for employee exposure, fire and explosion. *References: LPPs 2.4, 6.3, 6.7, 7.1, 7.6, and 9.9.*

MEANS OF EGRESS

Buildings and operations within each location shall have sufficient exits and regular drills to permit the prompt escape of occupants in case of fire or other emergency. *Reference: "Dow Guidelines for Emergency Planning."*

PRESSURE VESSELS

Pressure vessel design shall conform to applicable governmental codes and local Dow engineering standards. Pressure or vacuum relief systems shall be installed, registered, inspected and documented to prevent damage and rupture to equipment or to prevent other hazardous situations. *References: LPPs 6.5 and 14.3.*

PROCESS COMPUTERS AND DATA HANDLING EQUIPMENT

Process computers, data handling equipment and records shall be protected from loss due to fire, explosion, theft, water damage and unauthorized physical or electronic access. *References: "Dow Guidelines for Business Data and Process Control Computer Systems," LPP 15.4.*

REACTIVE CHEMICALS

Each location shall have an appropriate and active reactive chemicals program. Regular reviews of process reactive hazards shall be required for existing processes, new processes and whenever key personnel or a process is changed, as well as a thorough review of laboratory or pilot plant data prior to scale-up. *Reference: "Dow Guidelines for A Reactive Chemicals Program."*

RISK ANALYSIS

The "Fire and Explosion Index" guidelines shall be used to evaluate the hazard potential of all processes. This shall include a maximum probable property damage (MPPD) calculation and maximum probable days outage (MPDO) calculation.

Application of preventive and protective features shall be utilized to maintain an acceptable risk exposure to all Dow properties including products assigned to customers or stored in leased warehouses. *References: LPPs 1.2, 1.4 and Dow Guidelines — "Fire and Explosion Index" and "Warehouse Ratings."*

ROTATING EQUIPMENT

Critical rotating equipment, which upon failure can lead to personal injury or significant losses, shall be equipped with instrumentation to monitor and/or control hazardous operating conditions (e.g. temperature, pressure, speed, excessive loading and vibration). *References: LPPs 16.1 and 16.3.*

STORAGE

All toxic, flammable, combustible or corrosive materials in storage shall be separated and/or protected from fire exposures and shall be located to minimize exposure to other operations. *References: LPPs 1.5, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6 and 12.4.*

TECHNOLOGY CENTERS

Each manufacturing plant at a site shall use the minimum safety and loss prevention guides as developed by the technology centers for their particular process. The manufacturing plants shall perform safety and loss reviews of new capital projects and regular safety and loss reviews of existing plants in conjunction with process technology guidelines or best available Dow technology where Technology Centers do not exist for the subject plant.

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SECURITY:

The control of Dow assets, process technology, manufacturing know-how, and other proprietary information is a fundamental responsibility of all Dow employees. Supervision is responsible to develop a line driven security program and provide a secure working environment. All employees have a responsibility to conduct themselves in such a way as to protect and enhance the Company's interests.

ACCESS CONTROL

Each location shall have procedures which provide for authorization, identification and control of all people and vehicles accessing their facilities.

AUDITS

Each Area and site or location shall have regular and thorough internal and external audits of their security programs.

CONTROL OF BUSINESS DATA AND PROCESS CONTROL COMPUTERS

Procedures and policies shall exist to control the operation of business data and process control computers to keep them secure from deliberate intrusion, accidental threats, or natural disasters with appropriate contingency plans for disaster recovery. *Reference: "Dow Guidelines for Business Data and Process Control Computer Systems."*

CRIME AND FRAUD

Each location shall have and utilize procedures for the investigation, prosecution and restitution of cases where crime or fraud are committed against Dow with appropriate communication of incidents to Dow employees.

INFORMATION SYSTEMS CONTROL

Each location shall have established clearance procedures to control the publication of printed, photographic, verbal, video, written or other information relative to Dow and its operations.

LOCATION EMERGENCY CONTROL

Each location shall have a designated person responsible for overall security and the planning, programming and liaison necessary to effectively control location emergencies.

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MATERIAL CONTROL

Procedures shall exist at each location to control materials and goods entering and leaving the location. Activities which should be controlled include: purchasing, shipping, receiving, storage, salvage, donation, employee sales, scrap and wastes. Consideration shall be given to appropriate separation of the authorizing functions and receiving/accountability functions.

PROPRIETARY INFORMATION CONTROL

Each location shall establish programs to control Dow proprietary information with respect to its classification, marking, printing, copying, distribution, use, storage, recording, retrieval, transportation and disposal. *Reference: "Dow Guidelines for Handling Dow Proprietary Information."*

SOCIAL UNREST

Each location shall have procedures prepared and routinely tested for use in the event of social unrest.

OTHER RELATED SAFETY, LOSS PREVENTION AND SECURITY REQUIREMENTS:

DISTRIBUTION EMERGENCY RESPONSE

Each location shipping Dow products and key sales offices in countries through which Dow products are shipped shall have an Emergency Response System to render assistance in the event Dow products are involved in a transportation incident. *References: Dow Guidelines — "Distribution Emergency Response System" and "Safe Sample Shipping."*

INDUSTRIAL HYGIENE AND MEDICAL PROGRAM

Each location shall establish programs for the detection, surveillance and control of potential health hazards which may affect the safety and health of its work population and that of the local community.

MATERIAL HAZARD IDENTIFICATION

Each location shall identify and list the chemical, physical, toxicological, radioactive and reactive properties of all hazardous materials utilized and/or produced at that location and communicate this information to all who have a need to know on a regular basis.

PRODUCT STEWARDSHIP

Each location shall assess the health and environmental information on their products and take appropriate steps to protect employee and public health and the environment. The product stewardship program at every location rests with each and every individual involved with Dow products — from the initial concept and research to the manufacture, sale, distribution, use and disposal of each product.

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APPENDIX

ADDITIONAL REFERENCES

The following references, bearing the same title as the text of the Minimum Requirements to which they apply, contain useful explanatory materials.

INDEX OF TERMS

ANSI — American National Standards Institute
API — American Petroleum Institute
ASME — American Society of Mechanical Engineers
CEP/TM — Chemical Engineering Progress/Technical Manual
FMS/LP — Factory Mutual System Loss Prevention (Data)
G — Dow Corporate S&LP/S Guideline
LPP — Dow Loss Prevention Principle
NEC — National Electric Code
NFPA — National Fire Protection Association
OSHA — Occupational Safety and Health Administration — United States

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