

Docket 40-3392  
License SUB-526

APR 13 1994

Mr. M. D. Kosmider  
Plant Manager  
Allied-Signal, Inc.  
P.O. Box 430  
Metropolis, IL 62960

Dear Mr. Kosmider:

SUBJECT: RENEWAL OF LICENSE (TAC NO. L21672)

In response to your application dated April 18, 1990, requesting renewal of Materials License SUB-526, we have reviewed the information provided and have identified additional information that is needed before further action can be taken on your request. The additional information, specified in the enclosure, concerns the chemical and radiation safety programs at your facility. Additional information that may be needed regarding other safety programs will be communicated to you separately. Please provide the information within 90 days of the date of this letter and reference the above TAC No. in future correspondence related to this request.

If you have questions regarding this matter, please contact me at (301) 504-3416.

Sincerely,

ORIGINAL SIGNED BY

Michael Lamastra  
Licensing Section 2  
Licensing Branch  
Division of Fuel Cycle Safety  
and Safeguards, NMSS

Enclosure: As stated

Distribution: (Control No. 170S)

Docket No. 40-3392                      NRC File Center                      PDR  
Region III                                      MAdams                                      NMSS r/f  
FCSS r/f                                      FCLB r/f                                      FCLS2 r/f

\*See Previous Concurrence.

OFC	FCLB		FCLB		FCLB		FCLB	E
NAME	MLamastra*		RMilstein*		VLTharpe*		MTokar <i>2/5</i>	
DATE	04/13/94		04/13/94		04/12/94		04/13/94	

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Allied-Signal, Inc.  
P.O. Box 430  
Metropolis, IL 62960

Dear Mr. Kosmider:

SUBJECT: RENEWAL OF LICENSE (TAC NO. L21672)

This refers to your application dated April 18, 1990, requesting renewal of Materials License SUB-526. Our review was limited to your chemical and radiation safety programs. We will contact you at a later date if additional information is required in other program areas of your application.

Our review of your chemical and radiation safety programs has identified additional information that is needed before final action can be taken on your request. The additional information, specified in the enclosure, should be provided within 120 days of the date of this letter. Please reference the above TAC No. in future correspondence related to this request.

If you have questions regarding this matter, please contact me at (301) 504-3416.

Sincerely,

Michael Lamastra  
Licensing Section 2  
Licensing Branch  
Division of Fuel Cycle Safety  
and Safeguards, NMSS

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Region III

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OFC	FCLB <i>ML</i>	E	FCLB	E	FCLB	E	FCLB	
NAME	MLamastra:cw		RMilstein <i>RM</i>		VLTharpe <i>VL</i>		MTokar	
DATE	04/13/94		04/13/94		04/12/94		04/ /94	

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Request for Additional Information  
Application Dated April 15, 1990  
Allied-Signal, Inc.  
Docket No. 33-3392

Please provide the following information:

CH-1 Chemical Hazard Identification

NRC's responsibility for chemical safety is focused on two areas:

- significant chemical hazards to workers and the public resulting from the storage, handling, or processing of NRC licensed nuclear material (e.g.,  $UF_6$ ); and
  - chemical hazards of non-licensed material (including chemical release, chemical reactions, fire, and explosion) that could cause an accidental release of NRC licensed nuclear material.
- A. What are the onsite inventories of toxic and flammable chemicals that exceed the threshold amounts identified in OSHA's 29 CFR 1910.119 or EPA's 40 CFR 68?
  - B. Given the scope of NRC's responsibilities outlined above, what hazardous chemicals that are stored, handled, or processed have been addressed as part of the chemical safety program (CSP)?
  - C. Has  $UF_6$ , HF,  $NH_3$ , and propane been included on the list of hazardous chemicals? If not, please explain.

CH-2 Chemical Hazard Assessment

There are a number of well recognized and documented approaches that are currently considered appropriate for evaluating process hazards. For example, in 29 CFR 1910.119, OSHA has identified "What-If, What-If/Checklist, Hazard and Operability Study (HAZOP), Failure Mode and Effects Analysis (FMEA), and Fault Tree Analysis." OSHA also permits the use of "an appropriate equivalent methodology," but also requires that the analysis be "...appropriate to the complexity of the process and shall identify, evaluate, and control the hazards involved in the process."

- A. Describe the methodology (methodologies) used to conduct chemical hazard assessments. Include a statement of its objectives and describe how it:

Enclosure

1. systematically identifies and evaluates the chemical hazards involved in the process,
  2. takes into account information obtained from previous incidents,
  3. addresses engineering and administrative controls and the consequences of their failure, and
  4. addresses human factors.
- B. Provide a rationale as to why the chemical hazard assessments are appropriate to the complexity of the processes analyzed.
- C. Describe the composition of the hazard assessment (HA) team used to address chemical hazards and discuss why it is appropriate given the methodology selected and the complexity of the process. Do hourly employees participate in the hazard assessments? Does the team leader have experience in the selected methodology? Are relevant experts included on the team?
- D. Describe how the chemical safety portion of the hazard assessments are documented including identification of the hazard assessment method, input information, and the HA team's findings and recommendations.
- E. With regard to the CSP, describe how the HA team recommendations are resolved and implemented. Are there deadlines established for addressing and resolving recommendations, documenting decisions, and communicating hazard findings and decisions to appropriate personnel?
- F. Describe the management system used to track and document the implementation of recommended and approved actions.
- G. Describe the process for reviewing the validity of the chemical hazard assessments and the process for scheduling updates of those assessments that are determined to be invalid.

### CH-3 Process Safety Information

To conduct meaningful chemical hazard assessments, the licensee must compile the necessary process safety information. This information should include the highly hazardous chemicals used or produced by the process, the technology of the process, and equipment in the process. The information needed to satisfy NRC concerns is only a subset of the process safety information (PSI) relevant to the overall safety of the plant. It should be recognized, however, that the facility will need to meet the broader requirements established by the OSHA Process Safety Management regulation (29 CFR 1910.119).

- A. Discuss the types of information required to perform chemical hazard assessments including:

1. Equipment, instrument, and pipeline lists
  2. Process chemistry
  3. Process flow and piping & instrumentation diagrams
  4. Site plans and topography
  5. Equipment, piping, and instrument specifications
  6. Interlock and logic and fire water system diagrams
  7. Electrical area classification
  8. Protective system design and specifications
- B. Describe the system used to track and maintain the PSI needed to conduct chemical hazard assessments. How does Allied assure that this information is complete, accurate, and available?
- C. For the PSI relevant to chemical safety, describe whether the information is current, where it is maintained, and who is responsible for maintaining it; if a current version of the information does not exist, describe if there are plans and schedules for developing such information.

#### CH-4 Operating Procedures

Standard operating procedures (SOPs) should provide clear, written, step-by-step instructions for activities affecting processes of interest to NRC (see Section 1.0). The SOPs should be consistent with the current PSI.

- A. Describe how the SOPs are developed, reviewed, approved, distributed, and maintained.
1. Does the review process provide independence between the reviewer and the preparer?
  2. Are the SOPs reviewed by safety personnel to assure that health and safety issues have been adequately addressed?
  3. Do the end-users, e.g., operators, participate in procedure development?
  4. What is the mechanism used to assure that SOPs are appropriately changed to reflect corresponding changes in process chemicals, technology, equipment, and facilities?
  5. How often are SOPs reviewed and certified for currency?
  6. How does Allied assure that the SOPs are readily accessible to employees?
  7. How does Allied assure that management-approved recommendations of the HA team pertaining to operating procedures are incorporated into the SOPs?
- B. Describe how the detailed procedures, log-sheets, and checklists address chemical safety concerns during all phases of operation as indicated below.



1. Initial startup
  2. Normal, temporary, and emergency operations
  3. Emergency and normal shutdowns
  4. Startup following turnaround or emergency shutdown
- C. Do the operating procedures for processes having chemical hazards of importance to NRC (as defined in Section 1.0) address the following:
1. Upper and lower operational limits for process parameters, such as temperature, pressure, flow rates, concentration, composition, etc.
  2. Consequences of deviations including potential effects on health and safety from safe operating limits.
  3. Actions required to avoid deviations in the system or to return the system to normal mode of operation.
- D. Describe whether employees have ready access to the following sources of information:
1. Properties and hazards of chemicals used in the process
  2. Precautions necessary to prevent exposure to hazardous chemicals, including personal protective equipment, engineering controls, and administrative controls
  3. Control measures to be taken if physical contact or airborne exposure occurs
  4. Control of hazardous chemical inventory levels
  5. The type, location, and function of safety systems, such as shutdown interlocks, detection and mitigation devices, safety relief devices, alarms, etc.
  6. Unique or special hazards, e.g., radioactivity, criticality, etc.

#### CH-5 Site Wide Safety Procedures

The history of incidents and accidents at chemical facilities has demonstrated the importance of controlling the activities of non-routine workers and tasks. Site-wide safety procedures are intended to assure that such non-routine tasks, as well as tasks performed by non-routine workers (such as contractors or maintenance personnel), are carried out in a safe and effective manner. The procedures are used to communicate information on chemical and other hazards to all non-routine personnel.

- A. In the following areas, describe the procedures used to protect maintenance and contract workers from the risks of handling, using, and storing the hazardous chemicals identified in response to Question 1.B:

1. Access control for maintenance, contract, and support personnel into and out of the facility
  2. Hotwork permits that document measures taken for fire prevention and protection
  3. Confined space entry permits that document measures taken for explosion and asphyxiation prevention
  4. Lockout/tagout procedures that define rules and methods for deactivating process equipment while maintenance work is being performed on or around it
  5. Safe opening of process equipment
- B. Describe the contractor-management program that is used to assure that the contractors perform their jobs in a safe manner. Include a discussion of the following areas to the extent that they provide assurance that contractors are properly prepared for chemical hazards:
1. Training and testing in relevant process hazards
  2. Safety performance reviews
  3. Safety logs
- C. Describe how management-approved recommendations of the HA team are incorporated into site-wide safety procedures.

#### CH-6 Detection and Monitoring

Monitors, detectors, and alarms are used for early detection of undesirable conditions and to facilitate prompt and appropriate responses.

- A. Describe the approach to determine chemical hazard detection and monitoring needs. Include a discussion of the rationale for determining:
1. Whether detection and monitoring devices are required
  2. The number and location of detection devices
- B. Provide a list of detection and monitoring systems for identified chemical hazards. Include a plot plan showing the location of such systems.
- C. Describe how management-approved recommendations of the HA team are incorporated into the detection and monitoring program.

#### CH-7 Training Program

A training program provides information and hands-on experience to employees that helps them understand the nature and causes of problems arising from process operations. An effective program can significantly reduce the number and severity of chemical incidents arising from process operations.

- A. Describe the program as it relates to chemical safety including:
1. Identification of requirements
  2. Selection of instructors
  3. Measuring the effectiveness through testing and employer feedback
  4. Certification
  5. Maintaining employee training records
- B. Describe the material on chemical safety covered in the training, including general orientation and initial and specialized training. Does the material cover safety and health, safe work practices, basic process technology, standard operating procedures, emergency procedures, and routine and nonroutine work authorization activities?
- C. What is the frequency of refresher training?
- D. Describe the procedure for incorporating management-approved chemical safety recommendations of the HA team.

#### CH-8 Maintenance and Inspection Program

The maintenance and inspection program assures that equipment used to process, store, or handle hazardous chemicals is maintained to minimize the risk of releases of such materials.

- A. Describe the program as it relates to equipment used to process, store, or handle hazardous chemicals, including:
1. Methods used for identifying which safety-related components need preventive maintenance (PM) and inspection
  2. Methods used for identifying frequency of PM, inspection, and testing
  3. The training program for maintenance personnel
  4. Maintenance procedures
  5. Documentation of maintenance and inspection—describe the system used for maintaining records on all tests/inspections, breakdowns, equipment failure, and replacements
  6. Reliability studies - are the frequency and methods of inspection and tests reviewed against the results of reliability studies?
- B. Identify a current list of components that are receiving regular preventive maintenance.
- C. Describe the process for incorporating management-approved recommendations of the HA team.



CH-9 Management of Change

Management of change assures oversight of all modifications to equipment, procedures, raw materials, and processing conditions, other than replacement-in-kind, by identifying and evaluating the impact prior to implementation of the change.

## A. Describe the management of change program including:

1. Definition of change vs replacement-in-kind. Has a list of examples been prepared as reference material for employees?
2. Technical basis for change
3. Safety impact analysis performed on change
4. Authorization required before implementation
5. Modification of documentation (SOPs, process information, etc.) and tracking the changes
6. Retraining of employees

## B. Describe the process for incorporating management-approved recommendations of incident investigation and audit teams.

CH-10 Emergency Planning

Describe the process for incorporating relevant management-approved recommendations of HA, incident investigation, and audit teams.

CH-11 Incident Investigation Program

Incident investigation identifies the underlying causes of incidents which resulted in, or could have resulted in, a catastrophic release; evaluates the response to the incident; and makes recommendations to reduce the likelihood or severity of the incident.

Describe the program for investigating chemical incidents including:

- a. Categorization of incidents and corresponding level of investigation, e.g., setting up investigation team. Are selected near-misses investigated?
- b. Time frame for initiating an investigation
- c. Composition of investigation team
- d. Root cause analysis
- d. Content of incident report. Does the report include date of incident, description, contributing factors, root cause analysis, and recommendations?
- e. Mechanism for implementing investigation team's recommendations
- f. Documentation
- g. Review of relevant findings with affected personnel
- h. Retention of incident investigation reports

## CH-12 Audits and Inspections

Self-auditing provides assurance that the CSP is functioning as intended. It provides verification that the procedures and practices developed under the program are being followed properly and are adequate.

Describe the process used for auditing the elements of the CSP including:

- a. Scope and frequency
- b. Auditors (qualifications and independence)
- c. Audit protocol (e.g., review of relevant documentation and process safety information, inspection of physical facilities, and interviews with all levels of plant personnel)
- d. Documentation (effective elements, corrective actions)
- e. Resolution of findings (prompt followup on corrective actions)

HP-1 Revise your current application to incorporate all license amendments issued since April 15, 1990.

HP-2 Chapters 3 and 11 should be modified to incorporate the new requirements of 10 CFR Part 20.

HP-3 Chapter 9 should describe in greater detail the amount and locations of any mixed waste currently stored at the site.