



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

DOW CHEMICAL COMPANY

DOCKET NO. 50-264

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 6  
License No. R-108

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to Facility Operating License No. R-108 filed by Dow Chemical Company (the licensee), dated October 15, 1990, and supplemented November 19, 1990, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations as set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and
  - F. Prior notice of this amendment was not required by 10 CFR 2.105(a)(4) and publication of notice for this amendment is not required by 10 CFR 2.106(a)(2).

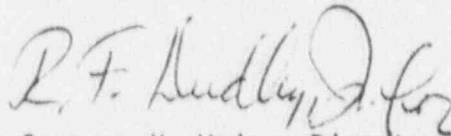
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the enclosure to this license amendment, and paragraph 2.C.(2) of License No. R-108 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 6, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Seymour H. Weiss, Director  
Non-Power Reactors, Decommissioning and  
Environmental Projects Directorate  
Division of Reactor Projects  
and Special Projects  
Office of Nuclear Reactor Regulation

Enclosure:  
Appendix A Technical  
Specifications Changes

Date of Issuance: December 13, 1990

ENCLOSURE TO LICENSE AMENDMENT NO. 6

FACILITY OPERATING LICENSE NO. R-108

DOCKET NO. 50-264

Replace the following pages of the Appendix A Technical Specifications with the attached page. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

<u>Remove</u>	<u>Insert</u>
11	11
12	12
13	13
14	14
41	41

### 3.3. Reactor Control and Safety Systems

#### Applicability

These specifications apply to the reactor control and safety systems and safety-related instrumentation that must be operating when the reactor is in operation.

#### Objective

The objective of these specifications is to assure that all reactor control and safety systems and safety-related instrumentation are operable to minimum acceptable standards during operation of the reactor.

#### Specifications

There shall be a minimum of one scram-capable analog safety channel.

There shall be a minimum of three operable control rods in the reactor core.

Each of the three control rods shall drop from the fully withdrawn position to the fully inserted position in a time not to exceed one second.

The reactor safety channels and the interlocks shall be operable in accordance with table 3.3A.

The reactor shall not be operated unless the measuring channels listed in Table 3.3B are operable.

Positive reactivity insertion rate by control rod motion shall not exceed \$.20 per second.

#### Notes

Safety channels with scram capability utilizing analog circuitry have been proven acceptable by more than thirty years of experience.

The requirement for three operable control rods ensures that the reactor can meet the shutdown specifications.

The control rod drop time specification assures that the reactor can be shutdown promptly when a scram signal is initiated. The value of the control rod drop time is adequate to assure safety of the reactor.

Use of the specified reactor safety channels, set points, and interlocks given in table 3.3A assures protection against operation of the reactor outside the safety limit.

The requirement for the specified measurement circuits provides assurance that important reactor operation parameters can be monitored during operation.

The specification of maximum positive reactivity insertion rate helps assure that the Safety Limit is not exceeded.

TABLE 3.3A.  
MINIMUM REACTOR SAFETY CIRCUITS,  
INTERLOCKS, AND SET POINTS

Scram Channels

<u>Scram Channel</u>	<u>Minimum Operable</u>	<u>Scram Setpoint</u>
Reactor Power Level	2	Not to exceed maximum licensed power
Reactor Period	1	Not less than 7 seconds
Wide-Range Linear/Log Channel Detector Power Supply	1	Failure of the detector high-voltage power supply
Percent Power Channel Detector Power Supply	1	Failure of the detector high-voltage power supply
Manual Scram	1	Not applicable
Watchdog (DAC to CSC)	1	Not applicable

Interlocks

<u>Interlock/Channel</u>	<u>Function</u>
Startup Count rate	Prevent control rod withdrawal when the neutron count rate is less than 2 cps
Rod Drive Control	Prevent simultaneous manual withdrawal of two control elements by the control rod drive motors

TABLE 3.3A

BASES FOR REACTOR SAFETY CHANNELS AND INTERLOCKS

Scram Channels

<u>Scram Channel</u>	<u>Bases</u>
Reactor Power Level	Provides assurance that the reactor will be shut down automatically before the safety limit can be exceeded
Reactor Period	Prevents operation in a regime in which transients could cause the safety limit to be exceeded
Reactor Power Channel Detector Power Supplies	Provides assurance that the reactor cannot be operated without power to the neutron detectors which provide input to the wide-range linear power channel and the wide-range log power channel
Manual Scram	Allows the operator to shut the reactor down at any indication of unsafe or abnormal conditions
Watchdog	Ensures adequate communications between the Data Acquisition Computer (DAC) and the Control System Computer (CSC) units.

Interlocks

<u>Interlock/Channel</u>	<u>Bases</u>
Startup Count-rate	Provides assurance that the signal in the log power channel is adequate to allow reliable indication of the state of the neutron chain reaction
Rod Drive Control	Limits the maximum positive reactivity insertion rate

6.6. Reports

6.6.1. Operating Reports

A report shall be submitted annually, starting with the first quarter 1991 performance of annual tasks, to the Radiation Safety Committee and to the Director, Office of Nuclear Reactor Regulation, US NRC, Washington, DC, with a copy to the Regional Administrator, US NRC Region III, which shall include the following:

- a) status of the facility staff, licenses, and training;
- b) a narrative summary of reactor operating experience, including the total megawatt-days of operation;
- c) tabulation of major changes in the reactor facility and procedures, and tabulation of new tests and experiments that are significantly different from those performed previously and are not described in the Safety Analysis Report, including a summary of the analyses leading to the conclusions that no unreviewed safety questions were involved and that 10 CFR 50.59 (a) was applicable;
- d) the unscheduled shutdowns and reasons for them including, where applicable, corrective action taken to preclude recurrence;
- e) tabulation of major preventive and corrective maintenance operations having safety significance;
- f) a summary of the nature and amount of radioactive effluents released or discharged to environs beyond the effective control of the owner-operator as determined at or before the point of such release or discharge (the summary shall include to the extent practicable an estimate of individual radionuclides present in the effluent; if the estimated average release after dilution or diffusion is less than 25% of the concentration allowed or recommended, only a statement to this effect is needed); and