

**SECURITIES AND EXCHANGE COMMISSION**  
WASHINGTON, D.C. 20549

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**POST-EFFECTIVE AMENDMENT NO. 1 to**  
**Form S-8**  
**REGISTRATION STATEMENT**  
UNDER THE SECURITIES ACT OF 1933

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**THE DOW CHEMICAL COMPANY**  
**(a Delaware corporation)**  
Executive Offices -- 2030 Dow Center  
Midland, Michigan 48674

(Name, state of incorporation and address of principal  
executive office of registrant)

I.R.S. Employer Identification No. 38-1285128

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**THE DOW CHEMICAL COMPANY**  
**2001-2002 EMPLOYEES' STOCK PURCHASE PLAN**  
(Full title of the plan)

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Charles J. Kalil  
Corporate Vice President and General Counsel  
THE DOW CHEMICAL COMPANY  
2030 Dow Center  
Midland, Michigan 48674

(Name and address of agent for service)

Telephone: (989) 636-1000

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This Post-Effective Amendment No. 1 is being filed to amend Registration Statement No. 333-56780 on Form S-8 pursuant to which the Registrant registered 6,000,000 shares of its Common Stock, par value \$2.50 per share (the "Stock"), for sale through The Dow Chemical Company 2001-2002 Employees' Stock Purchase Plan (the "Plan"). After the Registration Statement was filed and became effective, eligible employees purchased 4,124,534 shares of the Stock under the provisions of the Plan. Accordingly, the Registrant hereby deregisters the remaining 1,875,466 shares of the Stock.

#### **SIGNATURES**

*The Registrant.* Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this amendment to Registration Statement No. 333-56780 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Midland, State of Michigan, on May 3, 2005.

THE DOW CHEMICAL COMPANY  
(Registrant)

By: /s/FRANK H. BROD  
FRANK H. BROD, Corporate  
Vice President and Controller