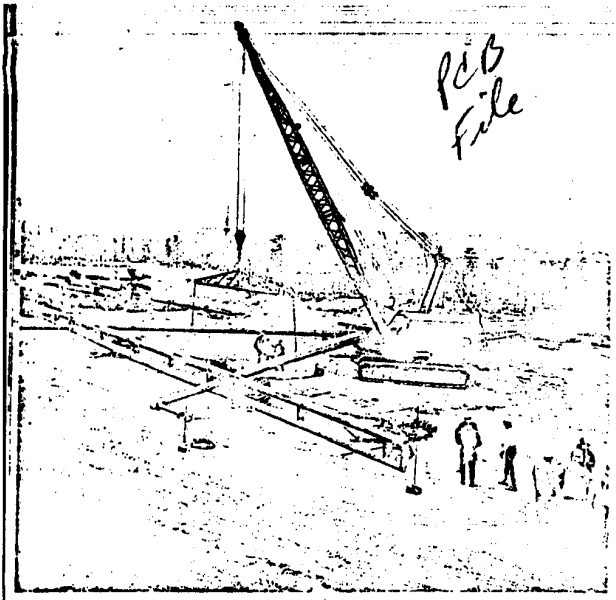

Tests completed on 500-kv Dreyfuss towers

Modern towers for 500-kv construction are gargantuan, and require large-scale testing facilities. These towers, shown under test this spring at the Hazelton (Pa.) plant of Meyer Manufacturing Inc, will be installed on Philadelphia Electric Co lines as part of the PJM transmission grid. Dreyfuss-type towers were chosen to make the line acceptable to environmentalists. But even so, legal intervention has, to date, prevented installation of the towers in the area for which they were intended. ■

Don't dump used Askarel

Askarel should not be disposed of carelessly, because of the posibility that some species of wildlife may be adversely affected, says W.B. Papageorge, manager of environmental control for Monsanto Co. Amounts actually being found in the environment are extremely small, he adds, making the problem of environmental control very difficult. Monsanto, however, has been asked to control losses at levels considered impossible in the past, to prevent Askarel from entering the environment even in trace amounts.

Safe disposal of Askarel that is contaminated beyond the point of recovery and reuse constitutes a major part of Monsanto's control efforts according to Papageorge. Many users do not have access to facilities that permit proper disposal of this material. Monsanto is offering its disposal facilities to those who do not have such facilities, as a service to their customers. Askarel to be disposed of should be shipped to Monsanto. The material will then be stored until an incinerator to handle it can be installed later this year.

Utilities are asked to ship their scrap Askarel to: Monsanto Co, Sauget, Ill. 62201, c/o Supervisor, Dept. 246.

The fluid should be shipped in heavy-duty drums. Monsanto is presently charging 3¢/lb of material returned for processing. This charge does not include freight or container costs. After the incinerator goes on line and actual disposal costs have been determined through experience, this charge will be reviewed. ■

Performance of 765-kv system is called good

CIGRE delegates early this month discussed the findings of extensive tests on the AEP 765-kv system. CIGRE paper 31-06, by H. Barnes and V. Caleca of AEP, described the results of 159 switching tests on the first portion of the system to go into operation. Results were compared to predictions made by transient network analyser (TNA) studies in the design stage.

The system had been designed for a 2.0-p.u. overvoltage. The possibility of exceeding this was recognized, but was accepted on the basis that any system must be able to sustain an occasional flashover. Studies predicted a 5% probability of seeing a surge of 2.1-p.u., but actual test results gave a 5% probability of seeing a 1.8-p.u. surge, with a maximum not exceeding 1.85.

Maximum overvoltages occur during high-speed reclosing due to trapped charges on the lines. The scheme used to dissipate these charges prior to reclosing was to put resistors in the neutrals of the shunt reactors at one end of the 69-mile line used in the tests. These resistors were nonlinear, to prevent initial overvoltage at the neutral bushing of the reactor, and were applied on only two phases. Calculations had shown that this would be effective, whereas one would not have been.

The resistors were normally shunted by a high-speed, 15-kv vacuum switch. This opened when the 345-kv breaker opened—there are no 765-kv breakers at this location—and closed automatically 30 cycles later to protect the resistor and to obviate the need for a signal from the remote breaker.

Comparative tests with the resistor in, and with them bypassed, proved that their presence caused the trapped charge to decay to a negligible value after 20 cycles, and to disappear completely by 30 cycles, when the breaker reclosed. This scheme proved so effective that it will be adopted in all future reactor installations. This and other developments should permit designing future lines for surges of 1.5 p.u. or less.

The necessity of using reactors to prevent dynamic overvoltages at light loads ing raises the question of how to operate should a reactor fail. Originally plans called for the line to be cut out until the reactor was replaced, but this entailed extended outages of possibly critical lines. TNA studies indicated that operating with one reactor out of service could generate intolerable over

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