



### AT ISSUE: ▼

To protect against available fault currents above 3500 amps, there are two functional choices for over-current protection of padmounted transformers: 1) the Bay-O-Net system, (consisting of an underoil expulsion fuse in a loadbreak holder in combination with a back-up partial-range current-limiting fuse mounted under oil on a panel inside the transformer tank), or 2) a drywell canister fuse system (consisting of a single sand-filled fuse with high-current and low-current filaments). Because each system protects against fault currents up to 50 kA, limits the energy allowed into the transformer tank, and offers the features of loadbreak/loadmake capability, deadfront construction, and hotstick fuse removal, there is a common misconception that these two choices provide the same protection at the same price.



### RECOMMENDATION: ▼

The Bay-O-Net system offers distinct advantages over the drywell canister system.



### RATIONALE: ▼

#### FIRST COST



The Bay-O-Net system costs less than canister fuses. Canister fuses are typically six to ten times the price of a Bay-O-Net expulsion fuse. In addition, holders for canister fuses can be as much as eight times more expensive than Bay-O-Net fuse holders.



#### PERFORMANCE

**Fuse coordination is relatively easy.**

Since a transformer's impedance is known, the maximum external fault current, or bolted secondary fault current, can be calculated and the Bay-O-Net fuse sized accordingly.



#### OPERATING COST



For overloads or secondary faults (the most common causes of fuse openings), only the inexpensive expulsion fuse requires replacement. The back-up current-limiting fuse remains intact. With a drywell canister fuse system, in instances of transformer winding fault, secondary fault or significant overload, the entire fuse is lost.



#### SAFETY

The two-fuse combination of the Bay-O-Net system eliminates the possibility of re-fusing an internally-faulted transformer. By contrast, with a canister fuse, line operators can close in on an internal fault after replacing the fuse, risking a violent explosion and possible severe injury.



#### MAINTENANCE COST

Because the Bay-O-Net fuse is easily replaced when pulled from its holder using a standard hotstick, maintenance time is minimized.



### THE BOTTOM LINE: ▼

The two-fuse concept of the Bay-O-Net and back-up current-limiting fuse is safer, easier to coordinate and more cost effective than drywell canister fusing for today's transformers.

