Duke Energy Ohio
Meldahl Dam Interconnection Project
Interconnection Customer AMP Ohio, Inc. is constructing a hydro-electric generating facility at the existing Meldahl Dam facility on the Ohio River. The IC requested the interconnection to be studied as a 112 MW Capacity injection into the Dayton Power & Light (DP&L) system by tapping into the existing Zimmer-Spurlock 345 kV circuit. This circuit is a jointly owned facility, owned by American Electric Power (AEP), DP&L, and Duke Energy-Ohio (DEO). The line is currently in the DP&L control area, but DEO has operational and maintenance responsibility by agreement among the co-owners. Therefore, it was agreed that DEO would design and install the necessary interconnection facilities. The DP&L/DEO control area boundary will be moved, resulting in the Meldahl Dam project output being injected into the DEO system.
Scope of Interconnection Customer’s Work

The Interconnection Customer’s direct connection facilities, up to but not including the point of interconnection to DEO’s facilities, include the following facilities:

- 138 kV line from generator step-up substation at Meldahl Dam to DEO Meldahl Dam Interconnection Substation
- 138 kV line termination structure
- 138 kV line circuit breaker
- Four 138/79.674-345/199.18 kV, 45 MVA single-phase auto-transformers
- Protection and control equipment for transformer and line
Duke Energy Ohio – Meldahl Dam Interconnection Project

Scope of DEO Work

The interconnection facilities to be constructed by DEO shall include a 345 kV switching substation and the necessary 345 kV line work required to redirect the Zimmer-Spurlock 345 kV line through the new substation. The Meldahl Interconnection Substation bus and switching configuration shall consist of a 3-breaker ring bus which will have positions to terminate the two newly established circuits, and a position to connect to the Interconnection Customer’s direct connection facilities.
Duke Energy Ohio – Meldahl Dam Interconnection Project

CCD OWN
DEO OPERATE & MAINTAIN TO ZIMMER 32.55 MI.

DEO CONTROL AREA

DPL CONTROL AREA

34541

ZIMMER

EXISTING DEO TO DPL CONTROL AREA BOUNDARY PRIMARY INTERCONNECTION METERING LOCATION. PRIMARY AND BACK-UP CT'S, PT'S AND METERS WITH REDUNDANT COMMUNICATIONS PATHS PROVIDED.

ZIMMER - SPURLOCK
EXISTING CONFIGURATION

DPL TO EKPC CONTROL AREA BOUNDARY
DPL TO DEO CONTROL AREA BOUNDARY BACK-UP INTERCONNECTION METERING LOCATION.

SPURLOCK

EKPC CONTROL AREA

EKPC OWN. OPERATE AND MAINTAIN 3.48 MI.
Duke Energy Ohio – Meldahl Dam Interconnection Project

ZIMMER-MELDAHL-SPURLOCK FUTURE CONFIGURATION
Duke Energy Ohio – Meldahl Dam Interconnection Project

The DEO-owned 345 kV ring bus and the AMP Ohio-owned 345-138 kV transformer are scheduled to be placed in service by 12/31/2013. This will create the new Meldahl to Spurlock DEO to DP&L tie line.

Outage Ticket 522614:
• 12/9/13 – 12/14/13 – Zimmer to Spurlock line outage

Cut-In Ticket 529625:
• 12/14/13 – 345 kV ring bus, circuit 34576, circuit 4541, AMP Ohio 345-138 kV transformer

Term Tickets:
• 571368: MELDALTP-SPURLOCK TIE Circuit 4541
• 571367: MELDALTP-ZIMMER2 MEL-ZIM Circuit 34576

Circuit 34576 Zimmer to Meldahl line ratings:
• SUM 1376 / 1529 / 1590 MVA
• WIN 1718 / 1909 / 1985 MVA

Circuit 4541 Meldahl to Spurlock line ratings:
• SUM 1295 / 1488 / 1548 MVA
• WIN 1559 / 1792 / 1864 MVA