

Summary of ISO/RTO Council Smart Grid Standards Development Activities

In parallel to the efforts by NAESB to develop standards for Smart Grid, the ISO/RTO Council (IRC) initiated the Smart Grid Standards Development Project in June 2009. The IRC consists of the CEOs of the 10 Independent System Operators and Regional Transmission Operators that together cover two-thirds of the load in North America. The goal of this project is to determine business processes and standards requirements that govern communication with respect to Smart Grid between the ISOs and others including:

- Market participants,
- Transmission owners,
- Storage operators, and
- Other entities serving as aggregators – including those for distributed generation, renewable resources, electric vehicles, demand response/management and regional coordination.

The project will be conducted in coordination with NIST and DOE standards development activities and where possible leveraging existing standards. Phase 1 of the project is scheduled to be completed by February 2010.

Phase 1 of the project focuses on business processes and standards for Demand Response (DR) in Smart Grid. In particular, achieving DR via bids/awards or dynamic pricing at the retail level.

Phase 1 has the following tasks:

Task 1: Review existing ISO business processes and create an impact matrix for DR. This matrix will identify the business processes that require changes to accommodate DR.

Task 2: Develop business processes for DR. Some generic business processes could include:

- Registration,
- Outage management,
- Scheduling,
- Bidding/offering,
- Market clearing,
- Award notification,
- Service monitoring,
- Dispatching,
- Validation, and
- Settlements and billing.

Task 3: Develop use cases for existing and potential new services provided by DR technologies. A master use case which describes the sequences of user/system actions to achieve DR will be developed. This

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master use case will be used as a prototype to test information models, standards, and application programming interfaces.

Task 4: Develop information models with the required data to support the use cases. The information models will be developed consistent to NERC and other relevant information model standards.

Task 5: Based on the information models developed, recommend data exchange standards, application programming interfaces supportive of Smart Grid technologies.

Deliverables from Phase 1 include:

- End-to-end business process flow diagram for ISO/RTO to support DR,
- Impact matrix for Smart Grid DR technologies,
- Proposed business processes for Smart Grid DR technologies spanning across key ISO/RTO functional areas,
- Proposed use cases for DR technologies,
- Recommended information models for DR technologies,
- Recommended application programming interfaces standards for DR technologies, and
- Final report summarizing the above.

At the end of Phase 1, a recommendation for Phase 2 to look at standards for Smart Grid technologies for distributed generation will be made.

The IESO has been contributing to the project in the areas of cyber security and application programming interfaces.

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